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Art. I. *On the Humoral Pathology.* By John Eberle, M. D.

On a exagéré sans doute la médicine humorale, mais elle a des fondemens réels et dans une foule de cas on ne peut disconvenir que tout doit se rapporter aur vices des humeurs.

Bichat Anat. Gener. T. 1. p. 253.

When we advert to the general economy of the animal system,—the influence which its solid and fluid parts exert upon each other, and their combined agency in the production of the phenomena of life; it appears strange that either of those parts should have ever been regarded as the exclusive seat of disease. In all sciences of a mixed character, embracing demonstrative with speculative disquisition, we are constantly in danger of erring, by indulging in hasty and all-encompassing generalization. In medicine, especially, this has been the source of much illusion and frivolous contention. Systems, without number, have thus arisen; all pretending to bring together the mass of segregated and unassimilated materials into a solid and regular fabric of science, sustained and cemented by some *universal* principle. What the fate of those systems has been need not be told. The proudest and most beautiful have passed away, and are almost forgotten. In a science like that of medicine,

this must necessarily be the fate of all universal systems. The animal machine is too complex in its structure,—too variable and incomprehensible in its organic actions, to admit of those exclusive doctrines which have been so common in our science, and which have operated, perhaps, more than any other circumstances, against its real advancement.

In the annals of science, there is perhaps not a more striking example of the fallacy of reducing, under one common scheme of doctrine, a multitude of unassociated and independent phenomena, than is found in the two opposing systems of the humoral and nervous pathology. For many centuries the former of these doctrines was universally received. Every disease was referred to a morbid condition of the humours. The solids were entirely thrown out of consideration in accounting for the appearances of disease. In the progress of science, however, when the structure and economy of the living system became better understood, it was seen, that a vast number of phenomena could be explained rationally, only by referring them to the laws which regulate the actions of the living solids. The humours, or more properly speaking the blood, now began gradually to lose its former consequence. Solidism, instead of humoralism, became the fashion of the day; until finally, from the natural tendency of the mind to pass into extremes, the blood is almost universally lost sight of as an agent, capable by its own morbid condition, or the adventitious matters it may contain, of producing and sustaining general disease.

Truth, however, in relation to these doctrines, as in most other instances, lies probably in the middle.—

Virtus est medium vitiorum et utrinque reductum.

To me, at least, it seems demonstrable, that neither the solids nor the fluids can, with correctness, be regarded as the exclusive seats of disease, but that each of these parts is susceptible of morbid changes and impressions, capable of involving the general system in disease.*

* On voit d'apres cela qu'il ne faut point envisager la question d'une manière générale, comme on l'a trop fait jusqu'ici ; qu'une théorie exclusive de solidisme ou d'humorisme est un coutre-sens pathologique, comme une thé-

It must be confessed, however, that the notions of the ancient writers, concerning the condition and influence of the humors in diseases are crude, and in many respects manifestly erroneous. But although we may not, at the present day, give into all the extravagancies of the ancient humoral doctrine, we are not, on that account, warranted in rejecting it altogether. For, in its true and rational acceptation, the humoral pathology differs as widely from the ancient doctrine known under this name, as the present pathology of nervous excitement differs from the solidism of Themison and Thessalus of old. And, indeed, as well might we withhold all belief in the present doctrines of excitement, because Themison taught that diseases depend on a *stricture* or *relaxation* of the solids, as to deny the power of the blood to undergo diseased modifications, because we do not now speak of fermentations in this fluid, or watch with philosophic forbearance for the critical concoction of *peccant* matters. "The humoral pathology," says Dr. Armstrong, "no doubt abounded with absurdities, but I am nevertheless fully satisfied that there are several diseases to which it might in some degree be justly extended; and I therefore believe that its almost entire abandonment has been prejudicial, by leading us from the investigation of various morbid states of the fluids, and the means best fitted to correct them."†

Whether we regard the blood as a vital or a dead fluid, its constant influence upon the various organs of the living system, is unquestionable. For, a material, which, like the blood, constantly moves through the system and penetrates every fibre; which acquires certain qualities and loses them again in its circuit through the body; which, in fine, conveys the elements of all our secretions, and keeps in play, the very fountain of life—the heart; must, it is obvious, produce a constant though imperceptible impression upon the whole organization. As long as the blood retains its healthy condition, these impressions must be compatible with the healthy performance of the organic functions of the animal economy. A change in its natural constitution, it is reasonable to conclude, must be followed by a corresponding alteration in its general influence

orie dans laquelle on mettroit uniquement en jeu les solides ou les fluids en serait un physiologique.—*Bichat. Anat. General.* T. 1. p. 26.

† Armstrong on typhus fever, p. 120. Amer. Ed.

upon the system. Thus, when it is not duly decarbonated in the lungs, the brain, together with all the functions that depend on it, become torpid. And hence, it appears, that a certain condition of the blood, depending on the absence or presence of certain matters, is indispensible to the regular performance of organic action.

As the blood, therefore, unquestionably influences the organization, and as this influence must be modified according to the changes it undergoes while circulating in its vessels, it becomes necessary to inquire, in speculating upon this subject, how far this fluid is susceptible of any primary morbid alterations; whether from internal causes, or from the admission into its mass of foreign irritating substances. For if this can be established, it follows, that disease may arise from its impressions upon the organs through which it circulates.

A mere inspection of the blood, as it is drawn from the same person at different times, is enough to prove that it varies considerably both in colour and consistence. Sometimes it is very fluid and florid; at other times thick and black: it sometimes coagulates readily; at other times this change takes place slowly or not at all. It can hardly be supposed, that these different conditions of the circulatory fluid produce precisely similar impressions upon the heart, brain, and secretory capillaries. For if different modifications of the same agent impress the living system differently, such a supposition is inadmissible.

The *Mechanical Theory* of Boerhaave, which regarded *lentor and morbid viscidity of the blood* as the principal cause of diseases, was no doubt full of error. It may be observed, however, that there have been few medical systems, promulgated since the discovery of the circulation of the blood, which did not embrace some important pathological truths; and if in the wrecks of such systems we see nothing but a mass of useless rubbish, it is perhaps to be ascribed to prejudice and the influence of prevailing doctrines, rather than to the absolute erroneousness of all their parts. That viscidity of the blood is a common cause of disease, I by no means believe. But it nevertheless seems to me extremely probable, that such a state of the blood may sometimes play an important part in diseases. When it is reflected, how extremely minute the capillary vessels are, it is hardly to be sup-

posed that a viscid blood can pass through them with the same facility as one more fluid. And when, moreover, we take into consideration the important functions which are performed by this set of vessels, and the changes which, in them, are wrought upon the blood,—as, for instance, those effected in the lungs,—we find it difficult to believe, that any change in the consistence of this fluid, by which its motion is either retarded or accelerated in the capillaries, could take place, without some corresponding modification in the general results of the action of this set of vessels on the blood. These opinions derive support from some late experiments of MAGENDIE, performed with a view to ascertain the effects of viscid liquids introduced into the circulation. He injected olive oil into the the jugular veins of different animals, and found that this substance destroyed life by plugging the extreme ramifications of the pulmonary artery, and by thus "causing the circulation and respiration to cease, by preventing the arrival of the blood at the left side of the heart by the pulmonary veins." When the same substance was injected into the mesenteric vein of a dog, and repeated, after a lapse of eight days, upon the same animal, it was found, on dissection, after the animal had died, that "the vessels contained here and there some traces of oil, the liver was much larger than ordinarily, and of a pinkish pale yellow colour, with small irregular fissures on its surface. A somewhat thick solution of tragacanth produced the same effects."* Is it not likely that symptoms of congestion in the lungs and right side of the heart, may sometimes arise from a blood inordinately viscid, by which its passage through the delicate capillaries of the lungs is impeded?

The mass of blood is made up of two distinct kinds of matter; the one nutritious and destined for the growth and support of the system; the other recrementitious, consisting of the effete portions of the system returned into the circulation for elimination. When the nourishment and waste of the system proceed regularly, these parts maintain a due relative proportion. If destructive absorption, however, exceeds to any considerable degree the process of assimilation, or if any of the emunctories act without due energy, the recrementitious portion of the blood must accumulate, and soon

* Magendie's Journal of Experimental Physiology. No. 1.

predominate over that which is destined for nutrition. Thus, in persons badly nourished, or where some particular cause prevents the regular formation or absorption of chyle, or where the action of an important emunctory is impeded, the due proportion between the recrementitious and nutritious parts of the blood will soon be destroyed. Although the accidental defect of one organ may in part be supplied by the offices of another, yet it is certain that what is destined to be cast off by one, cannot so conveniently pass off by another organ.* Hence, as every excretory organ is destined to eliminate something which is no longer serviceable to the animal economy, the accidental obstruction of any important emunctory must induce an accumulation of recrementitious elements in the blood, and give to it morbidly irritating qualities. It may be alleged, however, that a *primary* lesion of *organic* function must take place before the blood can be thus modified in its qualities, and that such functional lesion is sufficient to account for any morbid effects that may follow, through the medium of the sympathetic connections of the different parts of the system. That diseases may, and indeed are most commonly thus propagated from the organ primarily affected, there can be no doubt. But I contend that this is not the only mode in which morbid phenomena are evolved in the system. In speculating upon the manner in which diseases are developed, we must, as in fact we ought to do in all our speculations concerning the nature and causes of things, follow step by step, as far as we can, the phenomena of disease in their order of occurrence. It is only in this way that we can be enabled to detect their dependencies and bearings. If the perspiration be obstructed, what are the consequences? In the first place there exists a torpor of the cutaneous vessels, the necessary consequence of which is the retention of a substance which the welfare of the living economy requires to be cast off; this being imperfectly done by the other emunctories, the blood becomes surcharged with irritating qualities, and this, in connection with the loss of balance in the circulation, or in other words, the accumulation of blood in the interior, and its deficiency in the exterior vessels, is, I conceive, sufficient to produce general disturbances in the system.

* Lind on Scurvy.—Dykman.

It is a remarkable fact, that in perfect *ischuria renalis*, or paralysis of the kidneys, although no pain or particular uneasiness be felt in the region of those organs, the patients gradually become *comatose*, and die in a very few days in a state of total stupefaction. Water is generally found effused in the brain; and in three patients, mentioned by Sir H. Halford, there was a remarkably strong urinous smell in the perspiration twenty-four hours before death.*

Death from inanition is, perhaps, mainly produced by the morbid stimulus of the blood. For, as total abstinence from nourishment, cannot act upon the system by any direct stimulus, especially when the gastric juice is thrown from the stomach by vomiting,† it is not improbable, that the irritating qualities of the blood, which under such circumstances it must soon acquire, produces the rapidly wasting fever of starvation. It has been thought a singular circumstance, that life should often be sustained for a very long time *in fevers*, without the reception of the least portion of nourishment; while in a state of health, the body cannot bear even a very short period of total abstinence without suffering serious consequences. This is generally accounted for, I believe, by ascribing the rapidity of the fatal consequences, in the latter case, to the action of the gastric fluid upon the stomach; whilst in fevers, on the contrary, where this secretion is but very sparingly, or perhaps not at all formed, the system is exempt from this irritation. That there is some foundation for this opinion, cannot be questioned. The cause here mentioned may aid, in a greater or less degree, other co-existing causes; but I doubt whether it has any very important

* Trans. of the College of Phys. of Lond. Vol. 4. 1820. See also an interesting paper on Ischuria renalis, by Dr. Abercrombie, in the Edinburgh Med. and Surg. Jour for April 1821

† A person in good health was prevailed upon to abstain from eating for more than 24 hours, and further to increase the appetite by more exercise than usual. At the end of this time he was very hungry, but instead of eating, excited vomiting by drinking warm water and irritating the fauces. The water returned mixed only with a ropy fluid, such as the gastric fluid is described to be by Spallanzani, or as I have myself obtained from a crow. After this operation, not only all desire to eat was removed, but a degree of disgust was excited by seeing others eat.

A Treatise on Indigestion, by Wilson Philip, M. D p. 68. Lond. 1821.

share in the production of the phenomena in question. In health the process of nutritive secretion is carried on, probably, without intermission. There is a constant secretion of nutrient particles, in order to supply the waste and growth of the system. Whenever, therefore, in this state, nourishment is withheld, the blood constantly depositing its nutritious elements, and receiving the effete or recrementitious particles of the body, and being at the same time deprived of its customary portion of new chyle, must soon become exhausted of that part of it, which is destined for restorative secretion. And hence it must soon become almost wholly recrementitious, and by consequence, unfit to sustain the functions of life. The heart and other organs, are irritated by this recrementitious mass of fluid; a low fever ensues, and death speedily follows. In general fever, however, it is quite otherwise. Here all restorative secretion seems for a while wholly suspended, or at least greatly diminished. The nutritious portion of the blood is consequently very slowly expended; and therefore, although no aliment whatever be taken, the system does not so soon suffer from this circumstance; because the blood still retains a sufficient quantity of nutritive elemens to prevet its acting injuriously upon the organization.

It is alleged, by the advocates of the sympathetic doctrine, that chyle is always essentially of the same nature, however various the substances from which it may be formed. The converse of this opinion is, however, proved by a number of facts, too powerful for mere speculative reasoning to controvert. If the nature of the food do not modify the chyle, and consequently the blood, how is it that the secretions, as well as the general state of health, are so much under the influence of our diet? Dr. Stark,* many years ago, restricted persons to a diet composed entirely of sugar and water. The persons, thus fed, were affected, in the course of some weeks, with scorbutic symptoms; the gums became spongy and covered with ulcerous spots, and sores broke out on different parts of the body. Latter experiments confirm those of Stark. Indeed it is now well ascertained that symptoms of scurvy may be produced,

* Clinical and Anatomical Observations, with Experiments dietetical and statical. By William Stark, M. D. London, 1787.

by confining persons either to an exclusive animal or vegetable diet.* That the scorbutic symptoms thus induced, are mainly dependent on a morbid condition of the blood, is not improbable, both from the altered appearance of the blood, which is thick, viscid and black, and from the disease being relieved by a recurrence to a mixed or opposite diet. Lind, Blane, and Millman,† regard scurvy as a disease of debility, having its primary seat in weakness of the digestive organs; and as owing its origin to a defective rather than a vitiated nourishment. Debility of the digestive organs is certainly among the earliest symptoms of disease. The stomach cannot long bear either a vitiated or exclusive diet, without suffering in its powers. But as we have no example of scorbutic symptoms arising from mere indigestion, or debility of the stomach, we are forced to admit the presence of some other cause; and as we have unquestionable marks of a morbid alteration in the state of the blood, we have a right to conclude, that this circumstance contributes to the production of the peculiar symptoms of the disease in question. That the appearances of the blood, however, are much influenced by the state of the digestive organs, has been particularly noticed by medical writers. Whatever the character of our food be, if the chyle be imperfectly elaborated, in consequence of a weakness of the digestive organs, considerable changes take place in the blood from its ordinary or healthy appearance. "In those who have long laboured under indigestion," says a late writer, "the blood is sensibly altered in some of its properties. The proportion, both of red globules and lymph is less than in health."‡

Independent, however, of the effects of indigestion, it is evident from a variety of facts, that the nature of the food itself has a very considerable influence, both upon the blood and the secretions. Animals that live wholly upon flesh, have a urine which consists almost entirely of uric acid.§ In graminiverous animals

* A Treatise on Tropical and Scorbutic Dysentery. By R. W. Bampfield 1819.

† An Inquiry into the Sources of the Symptoms of Scurvy, &c. By F. Millman. Lond. 1782.

‡ Dr. Wilson Philip, on Indigestion, p. 112.

§ Prout in Thomson's Annals of Philosophy. June 1815.

on the contrary, the urine contains no lithic acid at all.* And in man, it appears that the urinary deposits are constantly modified, according to the different kinds of nourishment and drink taken. How are these effects produced? Is it by the action of the food on the nerves of the stomach and bowels, and thence propagating a sympathetic action to the secretory vessels of the kidneys, enabling them thus to convert a larger proportion of the ordinary elements of the blood into the substances in question? Or does the chyle which is formed from certain kinds of food convey a larger portion of the elements of such substances into the circulation, and furnish a more abundant stock of materials to the secretory glands? This latter opinion derives strength from the observation of Magendie,† that the lithic acid is increased by an animal diet, in consequence of its furnishing the *azote* which is essential to the production of this acid.

We have strong evidence, also, of the influence of diet, both upon the physical and moral constitution of man, by adverting to the character and diseases of such people as, either from habit, necessity, or superstition, confine themselves almost entirely to one particular kind of food. The Norwegians, Siberians, and Laplanders, who live almost exclusively on fish, are said to be pusillanimous and subject to *scorbutic* and other *cutaneous diseases.* "Nul doute qu'll n'en (la nouriture de poisson) résulte l'introudction de principes âcres et nuisibles dans nos corps. Que delà naissent des dispositions ou scorbut, des affections cutanées rebelles, des gales des darters, dans le climats froids."‡ It is stated by other writers that ichthyophagists become languid, feeble, and overburthened with soft and oily fat. Such persons are also much subject to cutaneous diseases. The inhabitants of the sea-coast;—those of Lower Brittany, of Biscay, and along the borders of the Baltic are very much affected with the itch, scurvy, and tetter..§ "The results of the want of a due nourishment," says Dr. Bégin, "are conspicuous in those countries where the inhabitants are nourished with a meagre and insalubrious diet. Persons in this condition are equally de-

* Marcet on Calculous Affections, 139, 40.

† Magendie on Calculous Affections.

‡ Dictionaire des Sciences Médicales, T. 23. p. 367.

§ Cheyne de Infirm. Valet. Tuend. p, 61.

prived of moral and physical energy, and their diseases are attended with a remarkable sluggishness and debility."* The writings of Montesquieu and Cabanis furnish numerous observations of this kind. When, therefore, we consider that the chyle is the immediate product of the aliment taken; that this fluid, in its turn, furnishes the materials of the blood, and that the blood not only acts unceasingly upon the whole organization, but constitutes the very fountain whence all the materials of our bodies are immediately drawn, is it not extremely probable that the effects which have been mentioned as the consequence of a particular kind of diet, are produced through the medium of the circulation? We are indeed told, by a late writer, "that the process of assimilation, as performed either by the chylopoietic viscera, or by any part of the absorbent apparatus, completely decomposes all substances, and, however discrepant in their properties, reduces them to a homogeneous fluid."† That this opinion is unfounded will, I trust, be rendered evident in the subsequent part of this essay. So far, indeed, from the assimilative process *decomposing* every thing which is submitted to its influence, there is incontrovertible evidence at hand to prove, that substances do pass into the circulation in an undecomposed state.

Before entering more directly upon the facts which go to establish this point, it may not be improper to make a few remarks concerning the so common want of success in detecting in the blood certain substances received into the stomach, or otherwise subjected to the action of the absobents. Dr. Wollaston states, that he gave a person $3\frac{1}{2}$ grains of prussiate of potash, repeated every hour to the third time. The urine being examined every half hour, was found in two hours to be tinged; and to afford a deep blue at the end of four hours. But in the serum of the blood which was *then* drawn, no prussiate could be detected. Now, if this experiment be closely examined, it will be found extremely fallacious. In the first place, it must be observed, that probably but a small portion of the $10\frac{1}{2}$ grains of the prussiate received into the stomach was taken up by the lacteals. This small portion

* Principes Généraux des Physiologie-pathologique. Paris, 1821.

† Dr. Chapman on the Modus Operandi of Medicine

could not have entered the circulation at once: it must have been introduced very gradually with the chyle. But as the kidneys, no doubt, commenced separating it again from the blood, as soon as any portion of it was present in the circulation, it is evident that but a very small portion indeed, could at any time have existed in the blood. It is therefore not to be wondered, that he could not detect this substance in the serum of blood drawn *after* the greater part had already appeared in the urine. For the portion of prussiate present was not only very small, but was diffused through a mass of at least 24 pints of fluid. The urine, on the contrary, gradually collecting the prussiate, held, in less perhaps than a pint, a much greater quantity of this substance, than was at any one time present in the whole volume of the blood. Now Sir E. Home* states, that he found $\frac{1}{4}$ gr. of the prussiate necessary to half an ounce of serum, before it could be detected. It would therefore require more than 100 grs. of this substance in the blood before it could be detected, supposing that the serum amounts to 12 pints. Hence we see, that no inference can be drawn from experiments of this kind, which deserve to be regarded as militating against the opinions I am advocating. I have detected $\frac{1}{60}$ gr. of the prussiate of potash in 1 ounce of urine; which accounts for the ease with which this substance is detected in this secretion, whilst in the serum it escapes our test.

It may be observed, too, that many of the articles usually employed in experiments of this kind, have a tendency to pass off very rapidly by the kidneys. It would seem, that almost as soon as some of them arrive in the circulation, they are again eliminated by the emunctories; and hence, although the urine may be highly charged with such substances, yet the blood, being immediately deprived of them again, shall contain but a very minute portion, and this diffused through a large mass of fluid. Hence, also, we have an explanation of the fact, that certain substances, after having been brought into the stomach or cavity of the abdomen, may be detected in the mesenteric veins, vena porta, splenic vein and thoracic duct, whilst in the blood generally no traces of their presence can be detected. For, since many of the abdominal lymphatics open directly into the veins just mentioned, it is evident that

* Philosoph. Transact. for 1811, Part I.

the substances which these lymphatics absorb and convey into the veins in question, must be much less diluted in them, than they can be after being mixed with the general circulatory mass. But if we admit the existence of venous absorption, an opinion supported by strong authority,* this explanation is still more satisfactory. For if this be the case, the substances taken up must exist in these vessels, in an infinitely less diluted state than they do in the other venous trunks of the body, and consequently be much more readily detected in them than in the general mass of blood.

However great the difficulties which exist on this point are, we are not without many well authenticated facts which prove the admission of foreign substances into the circulation. In the chyle of the thoracic duct, Musgrave, Lister and Blumenbach, detected substances which had been thrown into the intestines of animals. But not to dwell on the testimony offered upon this subject by the older writers, we have abundant evidence of the existence of this physiological fact, in the researches of many of the most enlightened physiologists of the present day. The experiments of Professor Mayer,† of Home,‡ of Magendie,§ and the more recent and satisfactory researches of Professors Tiedeman and Gmelin,‖ do not leave any room to doubt upon this point. The experiments of the latter two physiologists prove, in the most direct and conclusive manner, that almost all those substances which are usually found in the urine, after having been taken into the stomach, may be detected by proper management in the serum of the blood of the venæ portæ, the splenic and mesenteric veins. These facts have been lately confirmed, in an extensive course of experiments on this subject, by Dr. Harlan of this city. The assertion, therefore, that "no unassimilated articles can ever be detected in the blood"¶ is erroneous, being contradicted by the direct and positive experiments of many of the first experimental physiologists of Europe.

* Magendie, Emmert. † Archiv fur die Physiologie, B. 3. S 496.

‡ Philosop. Trans. 1811. § Précis Elementaire de Physiologie.

‖ Versuche über die wege, auf welchen substanzen aus dem magen und Darmcanal ins blut gelangen U. S W. Von F. Tiedemon, M D. and L. Gmelin, M D.—Heidelberg, 1820.

¶ Dr. Chapman's Essay on the Modus Operandi of Medicines.

We are informed by Emmert, an eminent German physiologist, that he passed a ligature round the abdominal aorta of an animal, and inserted the prussic acid into its legs. The extremities became cold, but some portion of the irritability and sensibility remained. In 70 hours after its application the ligature was removed, and the effects of the poison immediately showed themselves.*

Similar experiments were performed with the poison *Woorara*, by Mr. Brodie.† "He exposed the sciatic nerve of a rabbit in the upper and posterior part of the thigh, and passed under it a tape half an inch wide. He then made a wound in the leg, and having introduced into it some of the *Woorara* mixed with water, he tied the tape moderately tight on the fore part of the thigh. He thus interrupted the communication between the wounds and the other parts of the body by means of the vessels, while that by means of the nerve still remained. After the ligature was tightened, he applied the *woorara* a second time in another part of the leg. The rabbit was not at all affected, and at the end of an hour he removed the ligature. Being engaged in some other pursuit, he did not watch the animal so closely as he should otherwise have done; but twenty minutes after the ligature was removed, he found him lying on one side, motionless and insensible, evidently under the influence of the poison." By this, and other similar experiments, it is rendered clear that the woorara affects the system only after having entered the circulation, and that there are certain substances which require to be immediately applied to some particular organ before their influence upon the body can be manifested. For it appears to be established by Mr. Brodie, beyond a doubt, that this, as well as many other poisons, act primarily upon the *brain* after having been admitted into the blood.

Besides the evidence afforded by experiment, there are other facts in very great abundance, which go to prove the absorption of foreign substances into the circulation. The effects of the long continued use of the nitrate of silver upon the skin, appears to me to be a striking fact in confirmation of this opinion. There are a

* Archiv für die Physiologie, herausgegeben von J F. Meekle, professor zu Berlin.

† Philosophical Magazine, June 1811.

considerable number of well authenticated cases on record, where the internal use of this article changed the skin to a black colour. The late Dr. Albers of Bremen, relates several cases of this kind.* A case also is reported by Dr. F. Harrold, in which the skin became quite black, and remained so for a long time, in consequence of the use of the nitrate of silver.†

It is a fact familiarly known, that medicines taken by nurses very generally affect the suckling infants, in the same way as if they had received the medicine directly into their stomachs.

Every one knows, too, that the milk of cows is imbued with the peculiar odour and taste of some of the vegetables they feed on. A very common plant in some parts of the United States, the *ambrosia trifida*, imparts an intensely bitter taste to the milk of cows who feed on it.

The flesh of certain animals becomes impregnated with the peculiar qualities of the substances upon which they feed. The sea-bream, according to Cook, when taken in the south sea, produces salivation. The same fish, taken in the pacific or atlantic ocean does not produce this effect. This property of salivating is derived from the fish feeding on the *medusa*, which is found in the southern ocean, and which is well known to possess this property. The birds that feed upon the buds of the *populus balsamifera*, have their flesh strongly impregnated with the peculiar odour of this tree.‡

I am well aware that it is denied by some, that these facts militate in favour of the doctrine for which I am contending. It is said, for instance, that the process of assimilation completely decomposes all substances; that elementary atoms alone are admitted into the circulation; and that these are again recombined, and rendered conspicuous when thrown into the secretions and excretions. That substances taken into the stomach, or otherwise subjected to the action of the absorbents, are not necessarily decomposed before they may be admitted into the circulation, is, I think, fully demonstrated by what I have already said. But granting that such a de-

* Vide Electic Repertory, April 1816.

† London Medical Repository, Vol. 5. No. for May 1817.

‡ Dr. E. D Smith's Inaugural Dessertation, Phila. 1800

composition does take place, it does not, I think, form any valid objection to the doctrine which alleges that the blood may become imbued with irritating or morbific qualities, in consequence of the introduction of foreign matters into the circulation.

When the milk, or the urine, or the flesh, or any other parts of the body, become impregnated with a noxious material taken into the stomach, the blood, from which these secretions are formed, must have contained either the substances themselves, or only their elements. It is evident, however, that blood which contains such elements, contains component parts which do not belong to it in its natural state. There is something present which is burthensome to the animal economy, and hence some emunctory is immediately employed to cast it out of the circulation. If these elementary substances, which are not essential to the healthy composition of blood, exerted no influence upon the system, is it probable that they would be so soon removed again out of the system? Does this fact not accord with that wonderful power of animated bodies, which is ever ready to remove such causes as are offensive to the living economy?

It has also been objected, "that it is incompatible with animal life, that such active substances should be received into the circulation, since milk and other bland fluids have been known, when injected into the vessels, to occasion immediate death."* It cannot be denied that substances *forced* into the circulation with a *syringe*, and of a reduced temperature, may, and in fact generally do, occasion immediate death. Even this effect, however, does not always follow such experiments.† But we cannot from this fact conclude, that the same violent consequences must follow the introduction of articles into the circulation through the medium of the absorbents. In the one case, the substance introduced is sud-

* Dr. Chapman's Essay on the Modus Operandi of Medicines.

† Dr. Smith, Wahrendorf, Borrichius, Magendie and others, injected medicines into the veins of persons. The effects produced, were such as usually follow the reception of the same medicines into the stomach. Sir E. Home repeated these experiments, and demonstrated anew that medicines may be thus introduced into the system, and produce their ordinary effects. Both Dr. Smith's and Sir E Home's experiments are published in the Transactions of the Royal Society of London.

denly and violently forced into the blood-vessels; whereas, in the other, it passes into the veins, drop by drop, without any unnatural impetus, possessing the precise temperature of the blood, and enveloped in bland and congenial fluids.

The truth, however, of the humoral pathology, does not depend on facts and experiments of this kind. It is sustained by the more conclusive phenomena exhibited in various diseases,—phenomena which it is impossible to explain rationally, without admitting the direct agency of the fluids.

Profuse hæmorrhages are not unfrequently followed by hydropic symptoms. This is commonly explained by ascribing the dropsical consequences to the debility produced from the loss of blood. That debility may have considerable influence in such cases, I am not disposed to deny. But I cannot help believing, that much ought to be attributed to the more fluid or serous state of the blood, consequent to the sudden *diminution* of the circulatory mass. Magendie* has recently demonstrated, what indeed had been noticed before, that absorption is accelerated or diminished according to the lesser or greater quantity of fluid circulating in the blood-vessels. When the vessels are full and turgid, absorption is comparatively slow; when they are less full, this process is proportionally accelerated. Now, in profuse hæmorrhages, the blood-vessels are suddenly deprived of much of their usual contents, in consequence of which absorption goes on with augmented celerity. The vessels, therefore, become rapidly replenished with a watery, and not perfectly assimilated fluid. The blood being thus rendered more fluid by the copious accession of a watery and crude serum, not only irritates the heart and arteries, but it also passes off more rapidly in consequence of its tenuity by the exhalents. "La predomenance," says a modern author,† "de la partie blanche sur la partie rouge du sang, n'est souvent qu'un effect de la cause précedente (des hemorrages, ou des saignées repéteés)." This opinion is strengthened by the experiments of Schulze‡ and Hales upon animals, which they quickly rendered hydropic by drenching

* Journal of Experimental Physiology, by M. Magendie, 1821.

† M. Itard. Dict. des Sciences Med Vol 22. p. 376.

‡ Dissertatio de venæ Sectione in Hydropicis Halæ, 1736.

them with water, or by injecting some of it into their veins. Haller, in his great work on physiology,* says, "Hinc a frequente venæ sectione, aut hæmorrhagia, in vasis tenuis et aquosus sanguis superest, ut in me ipso, post plurimum de nare amissum sanguinem expertus sum. Verum *si major nunc humoris tenuioris copia in vasis rubris est, non potest ea in vasis retineri*, nimis enim facilis calidæ aquæ ex arteriis in celulosum habitum exitus est. Inde fugiente in cellulosas telas aqua sanguinis, etsi etiam alia rationis sunt, a cachexia promptus in hydropen transitus, potaque uberrime aqua continuo in corporis habitu effunditur." Haller thus bears testimony to the fact, that copious hæmorrhages produce an augmentation of the serous over the other portions of the blood; and he explains this circumstance by supposing, that the red and more dense parts pressing forwards towards the bleeding orifice escape, whilst the serous portion, moving more slowly, remains behind. "Aquosa enim pars (says he) sanguinis de arteriis in celulosam telam fugit, & inania vasa deserit, inque cavernulis cachectica restagnat; ea, etsi non sola, ratio est, quare hydrops ex sanguinis rubri imminuta portione superveniat. Vena enim insisa, aut arteriola aperta *primum certe rubrum cruorum emittit, qui vulneri proximos sit; tenuiores vero humores, ut longe a vulnere remoti, lentiusque circumacti non perinde ad sedem minus resistentem confluunt, neque pari proportione effundunter.*" The predominance of the serous over the more dense parts of the blood, in consequence of profuse hæmorrhage, can hardly be doubted. Haller's explanation of this fact, as given in the above quotation, is however wholly inadmissible. We have a ready and a rational explanation of it in the fact so fully demonstrated by Magendie, and to which I have already referred.

When the common duct of the gall bladder becomes obstructed, the bile regurgitates, and enters the circulation. The serum of the blood becomes tinged yellow, and the whole system is penetrated by it. The consequence is, that general indisposition soon supervenes. Langour, slight febrile disturbances, debility and general distress of feelings ensue. One of the strongest and most incontro-

* Elementa Physiologiæ, T. 2. p. 150.

vertible facts of this kind, however, is afforded by the communication of certain specific diseases from the mother to the fœtus in utero.

The following two cases are taken from a paper by Dr. Jenner, published in the 1st vol. of the Medico-Chirurgical Transactions. "About five years ago," says Dr. J. "I was requested by Dr. Croft to vaccinate the infant of Mrs. W. a lady in Portland Place. The vaccine fluid, which was inserted fresh from the arm of another infant, produced scarcely any effect beyond a little efflorescence in the part, which in a few days disappeared. On expressing my surprise at this, such an occurence happening very rarely, Mrs. W. soon removed my embarrassment, by the following narrative. A few days previous to her confinement she met a very disgusting object, whose face was covered with small pox. The smell and appearance of the poor creature affected her very much at the time, and though she mentioned the circumstance on her return home, she had no idea that her infant might suffer from it, having had the small pox herself when a child. During a few days after birth, the little one seemed quite well, but on the 5th day it became indisposed, and on the 7th the small pox appeared. The pustules, which were few in number, matured completely. Dr. Croft put some of the matter taken from one of them into the hands of a gentleman, eminently versed in that practice, which produced the disease correctly. Mrs. W. was not sensible herself of any indisposition."

He mentions another case, which was given to him by Mr. Gervis of Ashburton in Devonshire. "A poor woman was vaccinated in the last month of her pregnancy. Her three children had been inoculated with variolus matter on the preceding day. The vaccination took place on the 6th of May 1808, and on the 11th June she was delivered of a female child, bearing much the appearance of small pox in the early stage. The event happened five weeks after the vaccination, and one month after she had been exposed to the variolus infection of her own three children, and that of several other persons in the same village. On the 14th he visited the child again, and found the eruption had increased to some thousands, perfectly distinct in their character. Many among the most respectable physicians and surgeons from Tatness and Ashburton saw the case. But to put the subject beyond a doubt, he

inoculated others with matter taken from the same child, and produced the small pox."

Dr. Pearson* relates several authentic cases of the same kind. Dr. Dyckman† refers to Bond, Derham, Turnbul, Roberts, Haygarth, Burserius, Lind, Forbes, &c. for similar observations.

Dr. Hossack‡ states that two cases of this sort occurred to him in 1799, while practising medicine at Alexandria, Virginia. From the same respectable author, we have the following remarks relative to the communication of Syphilis to the fœtus in utero. "The fœtus in utero," says Dr. H. "may and occasionally does become affected with the venerial disease, derived from the mother labouring under the disorder of a constitutional form. The ulcers which at times occur in the mouths of children, the offspring of such infected mothers, have produced the same disease upon the nipples of nurses, by whom they have been suckled. These women have imparted the affection to other children, and these children again to other nurses. Facts of this nature most satisfactorily establish the principle, that not only the blood itself may become vitiated by the matter of certain diseases, but that the secretions themselves are capable of communicating the virus of certain specific affections of the healthy constitution. It were easy to relate the particulars of several cases, for which I have prescribed; the pathology of which is capable of being explained upon no other principle."

In a recent highly respectable work,§ the following singular fact is related, on the authority of Mr. Carlisle. "A few years ago," says the writer, "a man was brought dead into the Westminster Hospital, who had just drunk a quart of gin for a wager. The evidence of death being quite conclusive, he was immediately examined; and within the lateral ventricles of the brain, was found a considerable quantity of a limpid fluid, distinctly impregnated with gin, both to the sense of smell and taste, *and even to the test of inflammability*. The liquid appeared to the senses of the examining students as strong as one third of gin to two thirds of water."

* Duncan's Med. Comment. Vol. 19

† Essay on the pathology of the Human Fluids.

‡ Appendix to Thomas' Modern Practice of Physic, by Dr. Hossack, page 1012.

§ Cook on Nervous Diseases. Vol. 1. page 221.

How will the advocates for the exclusive agency of sympathy account for these phenomena? It will hardly be contended by any one, I trust, that the small pox virus, or contagion, was in these instances conveyed by means of *sympathy* from the mother to the child. There is neither a nervous, nor any other *continuous* connection between the mother and the fœtus in utero; and hence I conceive it utterly impossible that any sympathetic action can be conveyed from the one to the other. But independently of this objection, it must be observed, that as no diseased action existed in the mother in consequence of the exposure to the small pox contagion, it could not have been propagated to the fœtus. For the primary irritation must be established before the secondary or sympathetic one can take place. But Dr. Chapman, in the Essay already alluded to, maintains the position, that a sympathy exists between the *blood* and the *blood vessels* or solids! This doctrine is, we believe, novel, and belongs to the professor himself; "The fluids," says Dr. C. "can only be secondarily affected, through the mediation and by virtue of the sympathies which they maintain with the solids. It is indeed impossible to conceive how the blood can undergo any changes, from impressions on the solids, were they not united by sympathy."

To me, however, this sympathy between the *blood* and the *blood vessels* appears to be entirely without foundation. It seems, indeed, absurd to imagine that an irritation can be carried from one part to another, without the existence of a continuous connection between them. There can scarcely be a doubt, that the nerves are the media through which sympathies are propagated. Dr. Chapman, however objects to this opinion, on the ground, "that there are many sympathies between parts, the nerves of which have *not the slightest connexion;*" and he instances the connection which subsists between the testes and parotid gland. Surely Dr. C. must be aware, that *all* parts have a continuous nervous connection with each other, through the medium of the centre of that system, the brain.

We have a beautiful instance of the propagation of an irritation from one part to another, through the medium of the sensorium commune, in the phenomena which result from tickling the soles of the feet. The diaphram and intercostal muscles are immediately thrown into action; and an irresistible convulsive laughter is pro-

duced. The nervous system therefore is the connecting medium between the different organs of the system. It is by this system that the various parts are united into a harmonious whole, and through which alone impressions are conveyed from one part to another—or in other, but less intelligible words, that sympathies are established. The assertion therefore, that the *blood* sympathises, in the legitimate sense of the term, with the *solids*, appears to me, to be carrying the doctrine of sympathy to an unwarrantable extent.

That the action of the blood-vessels, I mean their mechanical action, is capable, and often does effect changes in the condition of the blood, can hardly be doubted. The secretory glands, too, producing by their inordinate action, a diminished or increased separation of some of the regular component parts of blood, may in this way affect its deterioration. But we may, without doubt, admit all these things; we may even admit the great agency of sympathy, without being obliged to reject the doctrine which alleges that the blood is capable of undergoing morbid changes, in consequence of morbific substances introduced into the circulation.

The more we inquire into the nature and causes of the various phenomena of health and disease, the more we must be convinced of the futility of those speculations which, seizing upon some one principle, endeavour to reduce the whole scheme of vital action under its exclusive control. To explain every phenomena by sympathy is, I conceive, as erroneous as to account for every morbid appearance by referring it to a depraved condition of the humours. And, on the other hand, to reject sympathy altogether from our speculations in medicine, is no more correct, than to deny entirely the capability of the blood to receive morbific qualities. An enlightened and useful system of medicine, takes whatever reason and experience point out as answering the great purposes of the healing art, whether it be found in the systems of the humoral or the nervous pathologists.

Non fingendum est, aut excogitandum, sed quid natura faciat observandum.—Bacon.

ART. II. *Remarks and Observations on "Conjoined Suppuration of the Gums and Alveoli."* By HORACE H. HAYDEN, Dentist, of Baltimore, Honorary Member of the Medical and Chirurgical Faculty, and of the Medical Society of Maryland, &c. &c.

IN the various departments of science, and more particularly in that of medicine and its relative branches, every effort that is calculated to develope new facts, or to elucidate and improve upon old ones, may be considered as entitled to notice and to the approbation of its votaries; provided such facts and improvements are evidently new and useful, and are made, not from *sinister motives*, but for the actual promotion of the science.

The medical science has long since been considered, *by many*, as having arrived at its highest attainable degree of improvement, if not perfection. Nevertheless, almost every number of our medical journals presents us with some new discoveries or results, all tending, more or less, to the cultivation and still higher improvement of the profession, and to the amelioration of the condition of man. Thus, while the spirit of observation and research continue to be cherished among those who are engaged in the higher grades of the science, it is gratifying to see a disposition manifested towards the improvement of some of the subordinate branches, which, though interesting, and in some instances highly important, may be considered as having been too much neglected in this country, particularly by those who are immediately engaged in pursuits that have an intimate connection and relation with the general science.

I have been led to these remarks from having seen in the second volume of the "Journal of Medical and Physical Sciences" an "Essay on the Devastation of the Gums and Alveolar Processes," by L. Koecker, Esq. Dentist, &c. of Philadelphia.

There have been, at different times, several attempts by some of our countrymen to explain the physiological and pathological phenomena of the human mouth and teeth. But in most instances they appear to be little more than a bare repetition of what we find in almost every professional treatise or system of anatomy, surgery, &c. If any pretensions to new discoveries or improvements

are set forth, they mostly betray a want of knowledge of the first principles of this branch of medical science, and therefore calculated to lead into error.

In the present instance, however, I am inclined to view the subject in a different light; and since it comes from a source so respectable, and is a subject so interesting, and, moreover, treated with so much *candour* and ability; I am disposed, upon this or every other like occasion, to offer a few remarks, with a view to place the subject, if possible, in a clearer light, and to endeavour, at least, to assist in inculcating correct ideas of this branch of the science, that it may be said at least to have kept pace with the the other relative branches.

On the subject of the disease which Mr. Koecker terms "the devastation of the gums and the alveolar processes," (but which in Europe is called the "conjoined suppuration of the gums and alveoli,") Mr. K. observes, "This disease, I suspect, is far from being accurately understood, and is generally supposed to be incurable." p. 282.

The first part of this conclusion is drawn, I presume, from the manner in which Mr. J. Hunter and Mr. Fox of London have treated the disease. And if Mr. K. rested his faith on the opinions of those two gentlemen, (and I trust he did not), it is not to be wondered at that he should consider it as "far from being accurately understood." For, although I am disposed to admit the high and justly merited claims of Mr. Hunter, it is evident that he *was not* familiarly acquainted with the disease under consideration, as well as many other circumstances contained in his work on the "Natural History of the Human Teeth."

As to Mr. Fox's opinion on this head, there is a material difference; and did not Mr. K. discover a disposition to advance some indirect hints at the want of knowledge or skill in some of his professional confréres, I should, indeed, feel some regret, as well as no small degree of surprize, at the want of candour and consistency discoverable in his essay, when speaking of Mr. Fox; for he observes, "He (Mr. F.) speaks of the affection in so vague a manner, and so much so of its cure, that I am inclined to believe he *never* saw one affected, at least when it had advanced to any considerable extent." p. 282.

It is with some reluctance that I find it expedient to dispense with quoting the opinions of Mr. Fox, on this subject, inasmuch as it would necessarily enlarge and extend my remarks beyond the limits prescribed.

Suffice it to say, that whether he (Mr. F.) had "ever seen one affected," or not, he has described the disease in one of its forms, —the period when most prevalent—the appearances which it assumes—the effects which are thereby produced, with a variety of other circumstances attending it, and in a manner more accurate than has yet appeared, in the writing of any other English author.

Nevertheless I am decidedly of the opinion that he is wrong in some of his premises, and, also, in his conclusions. See Fox on the teeth, part 1. p. 88 to 93.

I must beg leave in the next place to inquire, how far, and to what extent this disease has been known, and whether it is "accurately understood."

It appears very certain that the disease was well known to the ancients; but was confounded with what (as Mr. Hunter says) was "vulgarly called scurvey,"—and as it was found to be a disease *peculiar* to the mouth or teeth, it was called Stomacace; and even Bachstrom employs the same term in his remarks on the scurvey, as it relates to the mouth.

The disease in question, however, was not, it is believed, separately treated of, until Fauchard wrote his work on the diseases of the mouth and teeth about the year 1728.

In that work, we can discover whether this affection was known or "accurately understood," and that too by the following. Tome 1. page 275.

"Il est encore une autre espèce de scorbut de laquelle Je pense qu' aucune Auteur n'a encore pris soin de parler; & qui sans intéresser les autre parties du corps, attaque les gencives, les alvéoles & les dents—Non seulment les gencives qui sont molles, livides, prolongées and gonflée, y sont sujettes; mais celles qui n'ont point ces vices ne sont pas exemptes de cette affection. On la reconnoit par un pus assez blanc, un peu gluant, que l'on fait sortir des gencives en appuyant le doigt un peu fortment de bas en haut sur celles de la Mâchoire inférieure, & de haut en bas sur celles de la mâchoire supérieure—le pus sort souvent d' *entre les gencives &*

le corps de l'alvéole, & quelquefois d'entre l'alvéole & la racine de dent; ce qui arrive plus fréquemment á la partie extérieure des mâchoire, qu'á leur partie intériure, & plutôt aux dents incisives & aux canines de la mâchoire inférieure qu'â celles de la supérieure qui sont cependent plus ordinairement affligées de cet accident que les molaires."

In 1754 it is again described by Lecluse, dentist to the king of Poland, in his Elements of Odontology. Page 210.

In 1757 the disease is most accurately treated of by Bourdet, in his Recherches &c. Tome 1. page 276.

In 1771 it is again described by Auzébi, dentist at Lyons. Traitée D'Odontotechnie, p. 147. And also, by Courtoise and Ricci, the latter a dentist at Rheims, see "Principes d'Odontotechnie," p. 44.

In 1773 we likewise find it treated of in an anonymous work published at Geneva. Nouveau traitée d'Odontology, p. 51 and 2.

In 1778 this truly afflicting complaint is perfectly described and treated of by Jourdain, (Maladies de la Bouche, vol. 1. p. 376 to 440.) In this instance the disease is termed "le conjointe suppuration des alvéoles & des gencives.

I shall now proceed to notice, briefly, the several opinions that have been offered on the character of this disease—of the cause or causes—of the symptoms, and of the effects.

1st. From the time at which Fauchard wrote upon the disease, and treated of it as peculiar to the teeth, and distinct from other diseases, most writers have considered it as a scurvey; and it is still viewed as such by many even at this day. But there is no circumstance that I have ever been able to discover, that would justify the conclusion that it has any connection with or relation to the scurvey.

Fauchard called it a species of scurvey; but one which no author had, at that time, taken care to speak of.

Jourdain likewise considered it a species of scurvey, or an affection analogous to it; and, at page 401, vol. 2, a genus of scurvey as yet unknown. The circumstance that inclined him to view it as such was, that the humour or matter that was discharged during its prevalence changed the syrup of violets red.

Courtois, who was well acquainted with the disease, and has de-

scribed its effects, has evidently confounded it with the scurvey.—(See Le Dentist Observateur, p. 94.)

Ricci, who has given a very concise account of the scurvey, does not mention the word in his description of the disease under consideration. Hence we are left to conclude, that he considered it as distinct from that of any other.

Bourdet, whose researches and observations have been carried to an extent but seldom equalled, and which discover an intimate knowledge of the physiology and pathology of the human mouth, says, that the suppuration of the gums does not proceed from any scorbutic taint. Hence we are left to conclude, that it is an effection peculiar in its nature, and as well or better understood by the appellation already given it, than by any other that could possibly have been contrived.

2dly. I shall notice briefly the causes which have hitherto been considered as operating either directly or indirectly in producing this disease.

Here again I regret that I cannot, consistently, bring into view the extent and variety of opinions advanced on this head, as many of them are interesting and important in a pathological point of view. Suffice it to say, that most of the authors who have written on this subject, (at least on the continent of Europe,) and who, it is believed, are pretty generally advocates for the humoral pathology, have assigned, among others, the following causes, viz.—A depraved or vitiated state of the circulating fluids in the part effected, thereby rupturing the capillary vessels and causing numerous little ulcers, which are actually found to exist on the surface of the gums next the teeth, whence comes a purulent discharge so common in the disease.

Great exercise of the mind, melancholy, bad diet, suppression of the hæmorrhoides, the sudden closing up or healing of setons, issues, &c. The "repercussion" of some prevailing cutaneous disease; the putrid miasma of low and humid places, of hospitals, &c.; and also the gaseous emanations from mines. See Ricci, p. 44.

In women, to the repeated and premature suppression of the milk, or, in other words, "les femmes qui ne nourissent pas leurs enfans, chez les personnes du sex mal reglées, ou à la cessation

de cet éconlement periodique," &c. to full and plethoric habits of body, unrestrained habits or excesses in eating and drinking, &c. &c.

Mr. Fox, however, and the anonymous author of Geneva, seem disposed to favour the opinion inculcated by Mr. K. viz., that it depends on the accumulation of tartar upon the roots of the teeth and under the gums. Of this I shall say more in the sequel.

3dly. Of the symtoms. To these already mentioned by Fauchard, are added a livid spongy state of the gums, "presque toujours brune ou plombié," (Bourdet.) A discharge from between the teeth and gums, "d'un mucilage blanchâtre, poissant & de mauvaise odeur," &c. (Jourdain.) Other less prominent symptoms are mentioned by several, but which it is not necessary to notice in the present instance.

4thly. The effects are, it is admitted on all hands, that if the disease is not attended to in the incipient stage, the patient must *inevitably* loose a great part if not the whole of his teeth, be they ever so sound, or the health of the person ever so sound in other respects.

After this brief exposè, and the numerous observations made by Bounon, as the result of an investigation instituted in the Hospital de la Salpétriere and S. Come, in order to ascertain the nature and variety of diseases of the mouth and their effects on the teeth, as well as other circumstances relating to the profession; and also those of Bourdet and Tenon, made in one of the hospitals in Paris, with the same view, and for the same purposes, and all of which have been published, it is not a little surprising that Mr. Hunter, Fox, Tuller, &c. &c. should have treated the subject so superficially, and betrayed so little knowledge of it; or that it should have remained, until *recently*, so little known and understood.

I shall proceed, in the next place, to an explanation of my own views of the subject, not however with the most distant idea of inviting discussion, or of a wish to invalidate the opinions of those who may have preceded me. But from a disposition to contribute a share to the elucidation of this disease, that, when better known by those who may be afflicted with it, and better understood by those who undertake its treatment, there may be less cause or pretense for persons being driven in *disgust* from the dentists of Paris,

or in affright from those of Baltimore, and be compelled to resort to either ancient or mordern Athens for relief.

The disease in question, though various in its character, is specific in its nature—peculiar in its operations—and, in all cases, *primarily* seated in the investing membranes or periosteum that surrounds the roots of the teeth, and lines the respective cavities of the alvioli.

It has been generally considered as one disease, embracing almost all the affections of the gums. Hence it is that the scurvy, so called, has been confounded with it. Even those who have taken a different view of the subject, as Jourdain, Bourdet, Ricci, &c. and have determined it "le suppuration conjoint des alvéoles et les gencives," have not been careful to explain *all* the different characters which it assumes, and have therefore treated of it under one head. But the fact is, that although the same in its origin, and nearly the same in its results, it assumes three distinct grades or forms, and in much the same manner as that in other complaints of the mouth arising from carious teeth.

The first is that which is frequently seen to attack one or more of the incisores of the inferior jaw,—less frequently the four canini and the incisores of the superior jaw. But no tooth in the mouth is exempt; neither the bicuspidi nor molares.

The first signs of this affection are manifested by a bright circumscribed redness about the *edge* of the gum, mostly upon the anterior surface of the tooth, and generally confined to one, but sometimes embracing two, and in a more advanced stage several teeth.

In this stage of the disease but little or no attention is paid to it. It continues to advance, until the gum is found to be detached from the tooth, for some distance in the direction of the root. But still, as the gum does not waste away as fast as the periosteum and external plate of the alveolus is destroyed, it excites little or no alarm, and is mostly neglected. In proportion as it advances, the greater is the disposition in the gum to bleed on the slightest touch; at the same time but little or no appearance of pus is seen to be discharged; on the contrary, a thin aqueous humour. Finally, if left to itself, the whole *anterior* plate of the process, with the corresponding portion of the periosteum of the tooth, is destroyed, and

the termination of the root or fang completely exposed to view, or surrounded by a portion of the inflamed lip or cheek which it is constantly excoriating.

In this state they often remain through life, pretty firm in their place, though depending on the adhesion of the remaining portion of the periosteum and socket of the tooth.

If, however, it is entirely neglected, and the disease aggravated by a variety of circumstances arising from a total neglect of the mouth, the tooth or teeth will at last loose all their support, and fall out as sound as when first formed.

This is an affection to which children, as well as persons of a more advanced age, are liable; and, it is believed, that Mr. Fox had an allusion to it when he speaks of persons being subject to the disease (suppuration of the gums) much earlier in life, than the usual period at which it commences.

In this grade of the disease, as well as the third yet to be maintained, there is much reason to believe that it is, in some instances, hereditary, as I have often seen it prevailing with one or both of the parents, and on the *same* class of teeth in one or more of the children. It is, however, subject to control by seasonable and judicious treatment.

The second grade of the disease, though peculiar to and originating primarily in the periosteum of the teeth, like the first, differs materially in some of its characters, being generally more rapid in its progress, and far more serious in its consequences: and moreover, being in its nature *beyond the limits of control*, except by the removal of *all* the teeth which may be involved in the disease.

As my object is to come as directly as possible to the main subject, the actual suppuration of the gums as generally considered, I must necessarily be brief in my remarks, as well in this as the preceding grade. I shall, therefore, content myself for the present by observing that it commences in the alveolar processes, either upon one or more teeth at the same time. It continues to advance sometimes rapidly, until the periosteum of the tooth or teeth is completely destroyed upon one-half or two-thirds of the length of the roots from the point. The processes of the teeth, or so much of the external, and sometimes internal, plates of the alveoli, as are involved in the disease, are wasted away or likewise destroyed. The

gums assume a very diseased appearance, throwing out upon their surfaces morbid granulations as in most cases of diseased bones; whence is discharged a thin ichor, which, when absorbed, produces such an excitement in the lymphatics, that they may be traced up the side of the face in a line almost as hard as a chord. The maxillary and cervicle glands are at the same time sensibly enlarged.

From the commencement, and during the progress of this disease, the gums remain united to the neck of the tooth or teeth as usual, with a portion of the orifice of the alveolus still embracing the tooth, so that on striking the crown of the tooth with an instrument, and at the same time applying the finger on the gums over the tooth, a sensible motion is felt in the root, showing not only that the socket of the tooth is partially destroyed, but that the disease originated in it.

This being the case, the disease may be said to be without the limits of control, except by the extraction of the teeth affected, when the roots will be found more or less completely deprived of the investing membrane; and where this is the case, no human effort can restore it again as in other diseased bones, and for very obvious reasons.

This form of the disease I have seen in several instances, and in one as early as at fourteen years of age; and, moreover, it may always be considered as an unequivocal mark of a scrophulous habit or taint in the constitution of the patient.

The third grade of the disease, or that which is very appropriately called the conjoined suppuration of the alveoli and gums, though differing in some of its characters, is the same as to its origin, and nearly the same in its results.

The symptoms having been so accurately pointed out by the authors I have quoted, and some of which are faithfully described by Mr. K., I consider it unnecessary to repeat them in the present instance, as little or nothing has been omitted on this part of the subject. I shall, therefore, proceed to speak of the causes by which this disease appears to be produced.

I have observed that it is primarily seated in the periosteum of the teeth, and that of the corresponding alveoli. Hence a disease peculiar to these parts, and to which the periosteum of the bones of other parts of the body are by no means exempt. Hence, too,

whatever tends directly to produce an irritation or inflammation in those membranes, may be considered as a proximate cause by which the disease is produced.

In the present case, we find it arising from two causes; the one external, the other internal.

That arising from an external cause is produced by the accumulation of tartar; which, from neglect or inattention, is suffered to collect in such quantities as, by insinuating itself between the gums and teeth, presses upon the periosteum, and, being sharp and uneven in its surface, produces irritation, inflammation, and a partial suppuration, which, if neglected, deprives the teeth of support, and they ultimately fall out.

In this instance, three circumstances present themselves as worthy of particular notice, as it respects the relation or connection existing between the disease arising from this cause, and the one yet to be described.

1st. The disease is, by no means, partial in its operation. Whenever the tartar accumulates in a quantity sufficient to press upon and irritate the investing membrane, whether on the molares of the superior jaw opposite the parotid duct, or the teeth opposite or in front of the sublingual ducts, (taking it for granted that the tartar is deposited from the saliva,) the effect is the same: on pressing slightly on the gums, pus is seen to flow out from between the gums and the tartar, or from under the gums and beneath the tartar; and that too, oftentimes, from *all* the teeth on which it has collected in any quantity. This is seldom or ever the case when the disease arises from an internal cause, for it commences upon one or more *alternately*, and so on through the whole circle of the jaw.

2dly. From the slow progress of the disease in this instance, although prevailing throughout the entire circle of both superior and inferior jaw, little or no fetor is observable in the matter thus discharged, unless the disease is far advanced; nor from any other source, except such as may arise from a want of due attention to cleanliness in the mouth, in which case it differs essentially from that which is emitted from pus discharged from carious or otherwise diseased bones. The case is directly the reverse when the disease is produced from an internal cause.

3dly. The disease, when arising from this cause, is susceptible of perfect control, provided the teeth have not lost their support by the destruction of the greatest portion of their respective alveoli. Nothing more is necessary than a judicious and careful removal of the existing cause, the tartar;—a proper attention to cleanliness, with a view to preserve the teeth free from any extraneous deposits; and the use of astringent and tonic gargles, elixirs, &c. of which there are many, and such as are very efficacious. How far this disease is susceptible of control, when arising from a different cause, may be seen by the various opinions that have been advanced on the subject, and the methods that have been hitherto pursued by those who have undertaken the treatment of it.

Conjoined suppuration of the gums and alveoli, appears to be occasioned by a morbid excitement in the periosteum of the teeth and alveoli, from some internal cause; and from the period of life at which it generally attacks the patient, it has been considered, by most writers on the subject, as an indication of some change in the economy of the system, or constitutional depravity in the circulating fluids, by which a change in the vascular action of the part affected is produced, and which terminates in conjoined suppuration, &c.

Hence, it has been alleged, that those who are most frequently attacked by the disease are such as are of full habits of body, or, in other words, corpulent; and those who, after the meridian of life, are subjected to habitual costiveness. It is said to be also occasioned by great exercise of mind, melancholy, bad diet, suppression of the hæmorrhoides, the sudden closing up or healing of setons and issues, the "repercussion" of some prevailing cutaneous disease, &c.

With women it is said to be occasioned by the premature and repeated suppression of the milk. It is considered as a consequence of obstructed or suspended catamenia; as it is found frequently to prevail with those of the sex, "mal reglées, ou à la cessation de cet écoulement périodique," &c.

Whatever agency these circumstances may have in the production or promotion of the disease, I shall not pretend to decide. This much, however, may be relied on.—The disease, as Bourdet has very correctly observed, seldom attacks any person under thirty years of age; though I have seen three or four cases at an earlier period.

From that to forty and upwards it is much more common. Persons of corpulent habits, of either sex, are peculiarly liable to it. Women, who have passed the critical period of life, are in frequent instances afflicted with it, however good may have been their previous state of health, or that of the mouth and teeth. And, in general, the disease in such cases is more rapid in its progress, and more difficult of control than in almost any other; and the quantity of pus discharged is very great, although the patient is rarely sensible of it, for it is mostly mixed with the saliva and carried into the stomach, or voided by spitting.

I have likewise observed, that persons subject to gout or rheumatism though corpulent, are seldom afflicted with this disease. On the contrary, I have remarked that persons, afflicted with a suppuration of the gums, are seldom troubled with gout or rheumatism; if so, however, the paroxisms are slight and of short duration.

Whether the disease of the gums or mouth may be considered as having any influence in preventing the gout or rheumatism, is not for me to decide in the present instance. The discharge, however, of fœtid pus from under the gums, during the prevalence of a "conjoined suppuration of the gums and alveoli," and that too of long continuance, may often be seen to exceed that from a seton. Hence, frequently, the extremely fœtid smell accompanying it.

I shall next offer some brief remarks on the treatment of this complaint.

The methods hitherto pursued, in Europe, by the most skilful medical practioners, as well as professional dentists, having been so rarely successful in effecting a cure, that one is left, and not without reason, to doubt the efficacy of any course of treatment which human ingenuity can invent. Nevertheless, in the incipient stage of the disease if the patient fortunately applies at that period, it is susceptible of a partial control.

At this period, the gums upon the anterior surface of one or more teeth, or upon the side next the tongue or roof of the mouth, or even between the teeth, discover a preternatural circumscribed redness. In a more advanced state it becomes purple, and even livid; somewhat swollen, and of a shining appearance. On pressing the finger, or an instrument, slightly upon the diseased part, a

thick purulent matter, or pus, is seen to discharge at the neck of the tooth. In this, and in a more advanced stage, Bourdet was in the habit of removing by excision the diseased portion of the gum.

This course he was led to pursue, with a view to a cure, from the following circumstance. While engaged with Tenon, in one of the hospitals in Paris, in examining the various diseases of the mouth, and their effects upon the teeth; they found, on dissecting up the gums, in a state of suppuration, that the inside next the teeth was covered with little white vesicles or blisters, from which was discharged a viscid humour, which being thrown, when living, upon the peritoneum and bone, was supposed to be the agent by which the alveoli are destroyed in this disease. Hence Bourdet considered it an erysipelatous affection; and finding the seat of the disease apparently in the flesh, it was denominated a suppuration of the gums.

We are not to conclude, however, from this circumstance that the disease is primarily seated in the gums; for it will be found in many cases, that when the periosteum of a bone is attacked by disease, it presents a vesicular appearance, and from which, in certain stages, is discharged a morbid fluid. The surrounding substance assumes a similar appearance, and frequently terminates in ulceration.

This is particularly the case, at least, in the mouth. Moreover, this disease often originates in the alveoli as in the second grade, and even upon the soundest tooth, commencing with an inflammation and swelling like the common paroulis, and suppuration follows. But in this instance the matter is seldom, if ever, discharged through the gums: it follows the direction of the root, and is discharged at the edge of the gums at the neck of the tooth: and will continue so to do, though in a less degree, until the tooth or teeth thus affected are deprived of all support, and fall out; for no effort can control the disease in this case, except by extracting the tooth.

This is one instance which shows that conjoined suppuration of the gums and alveoli is primarily seated in the periosteum of the teeth and alveoli—that it is occasioned by some constitutional defect or cause—and, moreover, that tartar can have no agency in

the business, as it is impossible for it to gain admittance, or be ormed there by the common process.

The method pursued and recommended by Bourdet, I have generally adopted; not however that I considered that in removing the diseased parts of the gums, I likewise removed the inflamed periosteum; but that by this course the torpidity of the inflamed vessels was relieved, and the tendency to a morbid excitement checked by new and healthy granulations, supplying the place of previous disease.

By this course and the use of appropriate gargles, of which those selected by Mr. K. are very suitable, (but in addition to which I would recommend the tincture of guiac.) I have generally been successful in checking the progress of the disease, in some cases even for several years. But whether as the patient advances in age, the disposition to disease in those organs increases or not, I have uniformly found the complaint to return, and, in some instances, with symptoms so aggravated, and at the same time to such an extent as to defy all control.

This disease, as described and treated, as long ago as 1728, by the most eminent of the profession in Europe, I have been acquainted with, and in the habits of prescribing for, these twenty years past. I have seen it in all its forms and stages, which, perhaps, it ever assumes; and, although I am ready to admit, as before that in the incipient stage it is susceptible of control and at all times may, by proper *attention* and *treatment*, be in some degree checked, I do not hesitate to assert that a *radical* cure of the disease is beyond the reach of medical skill. And whoever will take a correct physiological and pathological view of the subject, will not hesitate to admit the fact.

This, however, is not to be understood as applicable to suppuration of the gums, when occasioned by the presence of any extraneous matter, as tartar upon the teeth.

If we have to admit that the complaint may be overcome and subdued, it is even said, and not without reason, that when the disease is somewhat advanced, it is even *dangerous* to suppress it.

Malheureusement les secours que sont toujours demandés trop tard & dans un temps oú il est *impossible même dangereus* de supprimer cette suppuration dejà établée, & par laquelle la nature

cherehe á se débarrasser d'une humeur morbifique qui porteroit ses ravages sur des parties plus intérressant," (Ricci' Principes d'Odontotechnie, p. 44th.)

In confirmation of this, a case is mentioned by Jourdain, in which a lady, who otherwise enjoyed the most perfect health, was attacked by this disease, and which threatened to deprive her person of one of its greatest ornaments.

The course pursued for the treatment, was such, as in a degree, to check the suppuration; and while she was felicitating herself with the prospect of a speedy cure, she was, for the first time in her life, attacked with a dry cough, pains and heat in the breast, and spitting of blood, &c. Her physician, M. Bouvard, suspecting that these unpleasant symptoms were occasioned by the attempt to suppress or overcome the disease of the mouth, was under the necessity of resorting to measures, calculated for the *re-establishment* of the suppuration of the gums, having accomplished which, she was relieved from the alarming symptoms of organic disease.—(Maladies de la Bouche, tom. 1. p. 401 & 2.)

Another case is mentioned by the same author, of a lady who was attacked with a conjoined suppuration of the alveoli and gums. After submitting to the usual surgical operations resorted to in similar cases, such as excision of the gums, the use of the cautery, &c. she resorted to the Baths, to detergent drinks, to blisters, " & même á un seton entre les deux épaules sans retirer un succéss réel. Plusierers dents tombé & les autres annonçoient leur perte prochaine." (ibid p. 400.)

This disease, from the nature and extent of its ravages, and these too are as great or more so, among the opulent and rich as among the poorer classes of society, has, at different times, engaged the attention of some of the most skilful physicians, as well as professional dentists in Europe; and in the course of treatment, which they have pursued, they have, severally, resorted to every means for its cure that medical skill could suggest; such as emollient, astringent and detergent gargles of various kinds; astringent, tonic, and anticeptic elixirs; mercurial washes, absorbent powders, aromatic pastes electuaries, alteratives, sedatives, venesection, vessicatories, injections, setons, issues, excision of the diseased parts, scraping the diseased bones, *repeated* applications of the actual and potential

cautery, &c.—Notwithstanding which, their effects have proved ineffectual.

In some cases, and most probably, in the incipient stage of the disease; and in others, where much depended on the constitutional temperament of the patients, they have succeeded in subduing the compl int for a time only.

In their attempts at a course of internal treatment with the same view; but a very little, if any better success, has attended their efforts. Hence it has been observed by Fauchard, " ce qui est singulier, & que j'ai observé, c'est que ceux qui ont été traités de cet maladie par les remédes intérieur, soit qu'ils fussent antiscorbutique, soit qu'ils fussent differens *n'en ont point été guéris.*" (L'art du dent. Tome 1. p. 275.)

It it true that there have not been wanting persons in different parts of Europe, who have widely proclaimed the virtues of pretended specifics, which they have discovered, for the cure of this complaint. But their object seems to have been, *the profits* arising from the extensive sale of their nonpareille elixirs, &c. more than that of any intrinsic virtues which they possessed, in curing this afflicting malady. Of this, at least, they have been accused, and their Charlatanic nostrums publicly rediculed.

Such is the nature and character of the disease in question How far the opinions which I have advanced, relative to its cure, are correct, or to what extent they are to be admitted or supported, will appear by the following:

Fauchard, in his remarks on the complaint, observes " On doit conclure de ce que je viens de dire, que cette maladie *ne se guérit radicalement que lorsque les dents qui sont affectés sont hors de la bouche.*" (Tome 1. p. 276.)

Bourdet likewise remarks (Tome 1 p. 287) "Si au contraire on laisse établer la suppuration des gencives qui indique entre autres desordres, la déstruction de l'alvéole, *tous les remédes* que j'indique *seront d'un tres foible secours*, & ne pourront que prolonger la port de dents," &c.

In continuation of the remarks of Ricci (principes d'Odontotechnie, p. 44.) which I have already quoted, he further observes, " Les malades doivent donc dans cette malheureuse circonstance, se résoudre à voir leur bouche perdre son plus bel ornament, il ne leur

reste, pour diminuer ce désegrément, que l'usage des dents artificielles, qui leur deviennent alors indispensable, pour éviter la déformité & faciliter la prononciation & la mastication."

In the works of Jourdain, whose writings on this department of medical science stand unrivalled, we find the following: "J'ai connu beaucoup de personnes qui ont été rèellement attaque de la maladie dont il s'agit, que l'on a traitée même par les moyens que l'on dit avoir reussi & je puis protester que je n'en ai pas *encore vu une seule que l'on ait guérie.*" (Malad' de la bouche, tome 2. p. 399.)

ART. III. *On the Signs of Death, and the Manner of distinguishing real from apparent Death.* By HENRY W. DUCACHET, M. D. of New-York.

THE physician is not unfrequently called upon in cases of supposed death, to determine whether dissolution has actually taken place. He must sometimes satisfy the anxious doubts of the friends of the deceased. He must sometimes determine the propriety and safety of interring the body. His sagacity may be put in requisition by the civil authorities. And, in short, he is continually liable in the course of practice to meet with cases in which he must ascertain whether it be possible to re-animate the body, or whether life be irrecoverably extinguished. I propose, therefore, to consider the different signs which have been received as evidences of the presence of death; and to investigate the marks by which real death may be distinguished from suspended animation.

1. In an investigation of this nature *the history of the case* will afford us great assistance, and will sometimes of itself determine the question. For instance, if, when called to a person apparently dead, we learn that he has had a sudden profuse irruption of blood from the lungs, that he has been suffocated by the bursting of a vomica, that he has been precipitated from an immense height, or received a necessarily mortal injury in any way; if we ascertain that he has been for many hours under water, that his neck is dis-

located in consequence of suspension, that some aneurism of a large vessel has been ruptured, that he has laboured under a disease inevitably mortal, that he has taken certain poisons, or that previously to the occurrence of apparent death he has exhibited those symptoms which are the certain presages of dissolution; we may safely pronounce that life is extinguished. But the history of the case will sometimes, so far from assisting us in the inquiry, throw additional obscurity and doubt upon the subject. We may be told that without any appearances of indisposition, and without any known cause which may have terminated life, the subject has died in an instant. We may learn that he has, on former occasions, had fits of apoplexy, of syncope, or of catalepsy, in which he has been thought dead. We may find that he has had some lingering disease, not necessarily fatal in its nature, which has before reduced him to the borders of the grave, and perhaps brought him into the very embrace of death; and, that, notwithstanding, he has recovered. It may be that he has been taken out of the water after a few minutes submersion, or cut down very soon after being hanged; and he may perhaps have given some feeble signs of life. In all these instances we derive no assistance from the history of the case, and can form a judgment only from the phenomena exhibited by the body. Let us examine these, and inquire in what particulars real and apparent death differ, and how they may be distinguished.

2. The *absence of respiration* is one of the most striking marks of death. It is certain, however, that this function may be carried on imperceptibly, and yet sufficiently for the preservation of life; and that even in healthy sleep, it is not always manifested by any motions of the chest As this criterion was formerly esteemed of great value, various methods have been devised to ascertain whether a person breathes or not. Of these, the application of a mirror to the mouth and nostrils is the most common, and is generally considered the most conclusive. Should the glass retain its lustre, it may safely be concluded that respiration has ceased; but its being tarnished is no evidence of the actual continuance of this function, as the vapours condensed upon its surface may exhale from the stomach or skin of a body yet warm, although it may have ceased to breathe. It has also been advised to hold a burnin taper to the nostrils, and by the waving or the steadiness of the flame to

to ascertain the presence or the absence of respiration. The insufficiency of this test is so obvious as only to excite surprize at its ever being seriously recommended. Another experiment has been had recourse to, more ingenious indeed, but equally inconclusive. It has been suggested to place a vessel of water upon the scrobiculus cordis, and to observe if any motion takes place in the fluid. If so, it has been thought sufficient to prove that life still remains.* Upon this fanciful test we need but remark, that breathing may be performed by gentle actions of the diaphragm which would not sensibly affect the water; and that the motions of the abdomen in consequence of the fermentation constantly going on in the intestines, might produce unsteadiness in the vessel when the respiration had entirely ceased.

But were all these tests sufficient to determine beyond a doubt that respiration is suspended, they would be wholly unsatisfactory in ascertaining the extinction of life. The recovery of drowned persons, and the resuscitation of individuals from asphyxia, trances, and other conditions in which respiration has been totally suspended, prove that the existence of the vital principle is not incompatible with the temporary cessation of this function. In illustration of this we may adduce the instance of the celebrated French anatomist Winslow, who was twice committed to the tomb as dead, and yet lived many years after. We may refer to the remarkable case related by Dr. Jones of the gentleman in Devonshire, who having lain in state for a considerable time without breathing or any other sign of life, was revived by his insolent butler's pouring a glass of brandy down his throat to make sport for the persons who were watching the body.† And we may instance the case of the Rev. Dr. Tennant of New-Jersey, which every body knows.

3. The *coldness of the body* is another mark of death. It is, however, far from being a certain sign. It will be found in most cases of suspended animation; and is sometimes absent when death has undoubtedly taken place. As animal heat depends almost entirely upon respiration, a coldness will generally occur in

* Winslow suggested as an improvement to place the body upon the side, and to put the basin of water upon the cartilage of the last rib but one.

† Medical, Philosophical and Vulgar Errors, &c. p 135. Lond. 1797

all diseases in which this function is impeded or suspended. Hence the cold skin of asthmatics, and the coldness of syncope and hysteria. In some cases of apparent death, the very circumstances of the body will render it cold: as in cases of drowning, stupefaction from cold, &c. The body may be cold, therefore, and yet susceptible of resuscitation. And it will not unfrequently happen, that a remarkable warmth will be retained for a considerable time by a dead body. In all cases of sudden death from apoplexy, blows, wounds, lightning, &c. the body will retain its heat almost unimpaired for many hours. Another circumstance is worthy of being noticed as invalidating all the tests drawn from the temperature of the body. It will sometimes happen that a body which, in consequence of death, has been once perfectly cold, will regenerate heat, and after 24 or 48 hours feel nearly as warm as one recently dead. No dependence, then, can be placed upon the temperature of the body as a mark of death, or a sign of life; the body being sometimes cold while yet alive, and sometimes warm when dead.

4. Perhaps the *stiffness of the limbs* is one of the most certain marks of death, as it occurs in all cases of natural death, and is one of its first effects upon the body. Louis, in his letters upon the certainty of the signs of death,* declares that he has found it to occur in upwards of 500 persons almost immediately after death. Foderé has so often verified this fact, that he considers flexibility as in all cases a presumptive proof of the existence of the vital principle, even when no other sign of life is observable.† Mr. Hunter considers relaxation "as the criterion of life," and declares stiffness to be "the most certain and most evident proof of absolute death."‡ Indeed, he carries this test so far as to doubt whether any person was ever reanimated in whom rigidity had taken place. But rigidity cannot, without certain limitations, be safely received as the evidence of death. A person supposed to be dead may be cataleptic, or tetanic. He may be in a convulsion, or under the effects of intense cold, in which the external manifestations of life may be abolished, and yet the principle of life not be extinguished.

* Sur la certitude des signes de la mort.

† Medicine Legale, Tom. II. p. 361.

‡ Animal Economy. Lond. 1792. p. 130.

An evident difference exists, however, between the rigidity of spasm and the stiffness of death. In the former case the limbs are either absolutely inflexible, or immediately return to the same position when an attempt is made to straighten them. In death, on the contrary, the rigidity may be overcome; and when once relaxed the limb remains flexible. In rigidity from spasm too there are generally some remaining evidences of life in other respects. It may be remarked that the rigidity of death is not so general as the rigidity of congelation. In death the skin is loose and soft, and so are the breasts in females, and the abdomen. Not so, when the body is frozen.

If rigidity is a mark of death, flexibility is, however, no evidence of remaining life. In sudden prostrations of the vital powers by lightning, blows on the stomach, violent injuries of the head, apoplexy, spasms of the heart, intense affections of the mind, &c. the limbs retain their natural flexibility, and after the body has been dead for some time, the contraction of the muscles is relaxed and the limbs may readily be moved in any natural direction.

5. The state of the *circulation* is to be considered. It is well known that the circulation is not necessary to the preservation of the vital principle. Besides the facts already mentioned, we may instance the memorable case of Col. Townsend, as reported by Dr. Cheyne. That gentleman possessed the singular faculty of stopping the pulsations of the heart at pleasure; and in the presence of Dr. Cheyne, Dr. Baynard, and Mr. Skrine, remained for upwards of half an hour in voluntary abolition of the actions of life.* However insufficient the interruption of the circulation may be as a proof of the extinction of life, it is by no means immaterial to give attention to the subject in an examination of a case of doubtful or supposed death. If it is ascertained that the circulation is yet going on, we have conclusive evidence of remaining vitality; and this may sometimes, by careful inquiry, be discovered to be the fact, when a hasty and superficial examination might lead to a contrary conclusion. In feeling the pulse at the wrist for this purpose, it

* Cheyne's English Malady. See similar cases in Burton's Anatomy of Melancholy, Vol. I. p. 134. Edit. Lond. 1813. Celsus too tells us of a priest "qui, quoties volebat, mortus similis jacebat, auferens se a sensibus; et quum pungeretur non sensit." De Medicina.

must be borne in mind that while too much flexion of the arm may stop the pulsations of the artery, its undue extension may have the same effect. But, of course, no one will conclude that the circulation is arrested because the pulse cannot be felt at the wrist. This is generally the case some time before any appearances of death have supervened, and was doubtless in the instance which happened to the unfortunate Vesalius. The heart itself must be examined by placing the body in such a position, that the elevations of its apex may be perceived through the parietes of the thorax. So great importance was formerly attached to the action of the heart as a criterion of life, that a celebrated French surgeon (Foubert) never opened or dissected a body without first making an incision between the ribs, and introducing a finger to feel whether it continued to beat.*

As a test of the continuance of the circulation it has been suggested to open a vein. The effusion of blood has been considered an evidence that it is still maintained, while its cessation has been inferred from no blood being procured. I have, however, known an instance in which a very copious discharge of blood took place 24 hours after death, from an orifice which had been made in vain immediately on the attack of an apoplexy; and on inspecting the body of a person who had died instantaneously from a blow on the stomach, I have seen the blood in a perfectly fluid state, three days after death. Mr. Hunter has shown too that the blood does not coagulate in most cases of sudden death. Its flow from a vein is, therefore, no proof that the circulation is going on. Nor is it any evidence of the cessation of the heart's action that no blood is discharged. Cases are continually occurring in practice, in which blood-letting cannot be performed, when sensation and motion are yet remaining. At any rate, the operation can afford no test by which to ascertain the true condition of an individual supposed to be dead;† and should never be relied on, although it may be performed for the satisfaction of the doubting friends of the deceased.

* Desgranges, Mémoire sur les Noyés, p. 18.

† Should a bloody water be discharged, we may safely pronounce the person to be dead.

6. The state of *the eyes* should be examined. The eye affords perhaps the very best criterion of life and death. A film very generally forms upon the eye after death; yet as this is not always the case, and as it frequently occurs before death as a premonitory sign of the approach of that event, it cannot be received as a test whatever some authors may have said to the contrary.

A relaxation of the cornea is perhaps a certain evidence that death has taken place. Mr. Hunter calls it "a certain mark;"* and it is almost universally considered such by the standard writers on Medical Jurisprudence. Desgranges, however, observes that drowned persons have been reanimated after this symptom has taken place;† Dr. Hall says that the eye becomes flaccid in apoplexy;‡ and it is said not to occur in death from the prussic or the zootic acid.§ I have paid considerable attention to this sign as a mark of death, and although I would not presume with my limited experience to lay down any test as infallible, I cannot but remark that I have never observed the flaccidity of the cornea in a single instance during life, and have never once failed to find it in the dead. It is proper to observe that the flaccidity of the eye-ball will not always be discovered by the sight. Considerable relaxation and softness will have taken place in the organ before it can be perceived; and when considerable plumpness remains, it will be observed to yield on touching it with the point of the finger.

Another test afforded by the eye is the loss of elasticity in the eye-lids. This, so far as I have observed, (and I have applied it in a great number of cases,) is a never failing mark of the presence of death. If the eye-lid be pushed up with the finger, the eye will remain open. In no case of disease, however relaxed or exhausted the patient, have I ever seen this. It will during life invariably regain its situation, and at least partly cover the ball.

The insensibility of the pupil, evinced by the loss of its power of contracting on the application of light, has been laid down by authors as an evidence of death. But the same takes place in a deep

* Hunter's Animal Economy, p. 131.

† Mémoire sur les Noyés, p. 58.

‡ On Diagnosis, part I. p. 39. and part II. p 426.

§ Cooper's Tracts on Medical Jurisprudence.

sleep, in apoplexy, in asphyxia, in drunkenness, in injuries of the head, in poisoning, and in a variety of other cases. It is, therefore, not conclusive of the absence of vitality. Dr. Hall observes somewhere in his book on Diagnosis, that the pupil will contract in the recent dead. It no doubt will when the external phenomena of life have disappeared;—it is impossible it can be true of actual death.

7. The *depression* and *flatness* of *the loins* and *buttocks* are regarded by Blumenbach as an indubitable sign of death.* The elasticity of the cellular tissue, or mucous tela as it is termed by some physiologists, is the cause of the firmness and plumpness of these parts during life; and the loss of that vital elasticity by death, will no doubt produce in them a degree of flaccidity which will cause them to yield to the superincumbent weight of the body. The sign may perhaps be received as a certain one; for a length of sickness which would as much relax them as to produce the same effect, would cause too much emaciation for it to be observed. It must be remarked, accordingly, that the body is frequently too much wasted by previous disease to afford us the benefit of this sign.

8. The *lividness* of *the back* is another symptom upon which much stress is laid by the same author. It occurs almost invariably in dead bodies; but is frequently seen too in the living. Morgagni notes it as a constant occurrence in persons who have been hanged.†

9. The *open state* of *the anus*, from the relaxation of its sphincter, is perhaps a certain mark of death. But it does not often occur before the reality of death is ascertained by putrefaction. In such cases it is usually evinced by the discharge of a very offensive sanious matter. Certain diseases about the anus, as stricture of the rectum, may prevent its taking place; and others, as hæmorrhoids, may prevent its being seen.

10. The *cadaverous countenance* will frequently strike the eye of an experienced observer, and almost irresistibly bring him to the conclusion that death has really taken place, notwithstanding some appearances to the contrary. The *facies Hippocratica*, so called

* Institutes of Physiology, translated by Elliotson, p. 27. 370.

† De Sed et Causis Morb. Epist. XIX.

from the admirable description given of it by Hippocrates,* has been much relied on by medical jurists in cases of apparent death. It is drawn by that accurate observer not so much as a picture of death itself, as of its harbingers. It is, therefore, observed during life. Indeed Hippocrates himself has remarked that the same countenance is observable in persons who have been long watching, who have had a profuse diarrhœa, or who have undergone long abstinence; and he particularly cautions against deducing from it any unfavourable prognosis, without first inquiring whether it may not proceed from some of these cause. Foderé† says that it is frequently observable in persons about to be executed; and that he has seen it suddenly come on in dying persons after the administration of the last religious rites, although the expression was natural before. I have seen it in persons exceedingly reduced who have nevertheless recovered. It is far from being constantly present in the dead; and I think I have sometimes known it to disappear very soon after death. Yet as a sign which, taken in connexion with others, may assist in the diagnosis, it is not unworthy of attention. It is thus summarily drawn by Hippocrates. "The nose pointed; the eyes sunk; the temples hollow; the ears cold and shriveled, its lobes turned up; the skin of the forehead hard, tense, and dry; the colour of the face pale, black, livid, or of a leaden hue."

It is very commonly observed, that in the last moments and after death, a person will exhibit a strong resemblance to his parents, or to some other relative to whom in health he bore no similitude. It has been ridiculed by authors as a superstitious fancy, but certainly not by accurate observers of nature. The fact is undeniably so. And there is a very obvious reason for it. The expression of the countenance, however, although it may very properly be estimated in the concourse of symptoms that are exhibited in death, affords of itself no certain mark by which this event may be infallibly ascertained.

11. The *insensibility of the body* is a characteristic of death. To ascertain whether death has taken place, various means have been resorted to, to discover whether there are any remains of sensibility. It is certain, however, that all sensibility may be destroyed, and yet

* Προγνώσικον. † Médecine Légale, Tom II p. 355.

life not be extinguished. Nay, we read of cases of recovery after feeling was so far lost that the application of the actual cautery produced no pain. If any doubt remains after the preceding tests have been applied, it is certainly proper to employ some of the following. It has been suggested to blow into the nostrils some powerful stimulatory, as hellebore, mustard, &c. But if there is sufficient sensibility to excite sneezing, there can generally be no doubt, from other circumstances, of the continuance of life. Cases are recorded in which this has been the first symptom of returning animation; and in the account of the restoration of the Shunammite's son, we are told that he came to life by sneezing seven times.*

It has been recommended to introduce some sharp pointed instrument under the nail. This will frequently rouse a person from alarming syncope, and in hysterical stupors is one of the best means of reviving the patient. Cauterization and incisions have been advised. We read of persons prematurely subjected to dissection being roused by the cuts inflicted upon them;† and history informs us that, in countries where it is customary to burn the bodies of the dead, it sometimes happens that they are reanimated by the flames of the funeral pile.‡

Cupping has been suggested. There may not be sufficient vital energy to distend the cuticular vessels under the cup, and yet it may not be altogether extinguished. Should blood be obtained in this way, it is evident that life remains. The same objection will apply to blisters. Scalding with boiling water or oil is another proposal to test the sensibility of a person supposed dead. It may fail

* II Kings, Chap. IV. v. 35

† See the case of the Abbé Prévôt, as related by Foderé in his Méd. Lag. T. II. 352. and by Desgranges in Mém. sur les Noyés, p. 6.

‡ See Pliny's Natural History, Lib. vii. Cap. 52, headed "*de his qui elati revixerunt*," and especially the case of Avicula who revived, and cried aloud (too late however to be rescued from suffocation) that he was still alive. Also Lib. xxvi. Cap. 3. See too Adam's Roman Antiquities, p. 461. It would seem that resuscitations of this nature were not uncommon among the Greeks, as a special law existed relative to persons who had been thought dead but recovered after the performance of the funeral rites. They were called ὑστερόποτμοι or δευτερόποτμοι, and were prohibited from worshipping the Gods, or entering the temples on any account whatever.

to give him pain, but will certainly produce vesication if life remains. Electricity and Galvanism have been proposed. They are at best unsatisfactory. The excitability may be so far exhausted as not to be operated upon by them; and it is well known that decapitated animals, and bodies undoubtedly dead, will sometimes be so affected by the influence of these agents as to perform involuntarily some of the actions of life.

The ear is among the last of the organs to lose its sensibility; and when all external appearances of life have fled, will sometimes remain sensible to sounds. The ancients were not unacquainted with this fact. The Greeks had a custom of beating brazen kettles, and the Romans were in the habit of calling in a loud voice to the deceased to ascertain whether death had really taken place.* An interesting case is related by Louis to show the necessity of attempting to rouse a person apparently dead, in this way. A surgeon by the name of Chevalier had fallen into a lethargic state, in which he lost all appearance of sensibility, and from which nothing could rouse him. A person present, knowing him to be a great player at the game of piquet, cried out in a loud tone: "*Quinte, Quatorze et le point.*" At these words he instantly revived; and finally he recovered. The case of Lady Russel is equally remarkable. This lady had remained eight days in a state of apparent death; but her husband, unwilling to believe her really dead, obstinately resisted every proposal to bury her before putre-

* Some of the learned are of opinion that the custom of beating brazen kettles was intended to drive away evil spirits, whose airy forms were thought unable to endure so harsh a noise; and that the Greeks imagined the dead man's ghost to be thus secured from furies, and quietly conveyed to a peaceful habitation in the Elysian fields. Whatever superstitious fancies the vulgar may have connected with this custom, it was no doubt originally intended, and generally practised, for the purpose I have mentioned. This was undoubtedly the design of the Roman custom also, as they called (*inclamabant*) upon the deceased *by name* several times at intervals. After doing this for some time, they concluded the ceremony by repeating the words *ave* or *vale*. Much interesting information relative to these ancient customs may be found in Archbishop Potter's Archæologia Græca, Vol. II. and in Adam's Roman Antiquities. The medical reader will find that many other funeral ceremonies both among the Greeks and Romans, were instituted, or at least calculated to ascertain the actual death of the deceased.

faction should occur. On the eighth day she was roused by the ringing of the bells of a neighbouring church; and she lived many years afterwards.† It is a fact too attested by those who have themselves been in a state of suspended animation, that the sense of hearing will sometimes remain when all power of manifesting sensibility and consciousness, is gone. Winslow, in his work upon the signs of death, tells of a divine who, having publicly contended that absolution should not be given to any who did not exhibit some evidence of hearing, afterwards retracted this opinion in consequence of experiencing in his own person that the sense of hearing may be retained when all power is lost of making known the fact.

12. A peculiar *cadaverous odour* is said to be perceptible in most dead bodies, almost immediately after the extinction of life. It arises no doubt from incipient decomposition, a process which begins as soon as the vital powers are destroyed; for life is nothing but a constant resistance against physical and chemical influences. Yet it cannot be pretended that this odour can be perceived in every corpse; or that it can in every instance be distinguished from the emanations of a diseased body. It certainly cannot easily be perceived in cold weather, or in an airy apartment at any season.

13. *Putrefaction*, it must be acknowledged is the most certain evidence of death. But it is a nicer point to determine the presence of putrefaction than is commonly supposed. The usual marks of incipient decomposition, are a disagreeable putrid smell, a distension and swelling of the abdomen, and purple or greenish spots on different parts of the body. But it is not always an easy matter to distinguish from the putrid smell of a corpse, the nauseous odour produced by the decomposition of matters in the intestinal canal, or the effluvia which emanate from the body in some diseases. The swelling of the abdomen may occur in hysteric cases counterfeiting death, or may arise from fermentation during life. The spots it is impossible to distinguish from the vibices and maculæ which appear in many diseases. It is, therefore, a wise decision of medical jurists, that the opinion of a physician is as necessary upon this point as upon any other sign of death. Perhaps before putrefaction

† Journal des Savans, 1746, as quoted by Foderé. Méd. Lég. Tom. II. p. 396.

is so far advanced as to affect the solids of the body, it is safer to judge from the concourse of signs enumerated above, than to trust to the appearance of putrefaction alone.

From the foregoing examination of the signs of death, it is evident that the subject is one of the most important that can engage the attention of the medical jurist. There can be no doubt that from want of a proper acquaintance with the marks of death, physicians very often abandon patients, or neglect to use the means of restoring them when they are dead in appearance only. Nor can it be questioned that peasons are continually committed to the grave, who might be restored to their friends and the community, or at least preserved by a proper examination, from the horrors of premature interment. The legislation relating to the dead has by no means been such as the importance of the subject demands. Hence a celebrated author* proposed that there should be a public officer in every town, and in every district of country, whose sole business it should be to examine the bodies of persons reported to be dead; and that no corpes should be interred without a certificate from him, stating that all the signs of death have been exhibited. The code Napoléon had a particular chapter on this subject, the provisions of which were very judicious and ample. It required that no interment should take place without a permit from a public officer; that this officer should first visit the corpse within 24 hours after death, to convince himself of the actual decease of the individual; that he should make out his certificate, from the declaration of two witnesses, who should be the two nearest relations or neighbours of the deceased, or the person in whose house he may have died, and some relation or other.† And it was further or-

* Bruhier de l'incertitude des signes de la mort.

† Aucune inhumation ne sera faite sans ane autorization, sur papier libre et sans frais, de l'officier de l'état civil, qui ne pourra la délivrer qu'après s'être transporté auprés de la personne décédée, pour s'assurrer du décès, et que vingt-quatre heures aprés le décès, hors les cas prévus par les réglemens de police. Code Napoléon § 77. L'acte de décès sera dressé par l'officier de l'état civil, sur la déclaration de deux témoins. Ces deux témoins seront, s'il est possible, les deux plus proches parens ou voisins, ou, lorsqu' une personne sera décédée hors de son domicile, la personne chez laquelle elle sera décédée, et un parent ou autre. Code Napoléon § 78.

dained, that if any person should bury another without first obtaining permission as directed by law, he should be punished by imprisonment from 6 days to 2 months, and fined from 16 to 50 francs.* There were, however, two capital defects in the French law, which rendered it almost nugatory. No compensation was allowed to the officer for the performance of the duty, and no provision was made for punishing his neglect of it.

In this city the physician is required, when he may lose a patient by death, to give a certificate stating the name, age, and disease of the deceased, under the penalty of fifty dollars. And should any sexton allow a body to be interred in the cemetery under his care, without first obtaining authority for so doing from the certificate of the physician, he is punished by a fine of twenty-five dollars.† But physicians themselves are sometimes so negligent of the duty thus enjoined, that the wise intention of the law is continually defeated. And as the sextons are allowed to receive a certificate from any of the family of the deceased, they will seldom put them-

* Ceux qui, sans l'autorization préalable de l'officier public, dans le cas où elle est prescrite, auront fait inhumer un individu décédé, seront punis de six jours á deux mois d'emprisonnement, et d'une amende de seize à cinquante francs, sans préjudice de la poursuite des crimes dont les auteurs de ce délit pourront être prévenus dans cette circonstance. Code pénal, § 358.

† Be it ordained, &c. That whenever any person shall die in the city of New-York, the physician or surgeon who shall have attended such person during his or her last sickness, shall have a note in writing, signed with his name, with some one of the family in the house where such person shall have died, specifying the name and apparent age of the deceased, and the disease of which he or she shall have died; and any physician or surgeon refusing or neglecting to make and deliver such note, shall forfeit the sum of fifty dollars.

And be it further ordained, That no sexton or other person having charge of any cemetery, vault, or burying ground, within this city, shall, under the penalty of twenty-five dollars, permit any dead body to be interred therein, until he has received a note in writing; signed as aforesaid, or in case no physician or surgeon shall have attended the deceased person, or the physician or surgeon who did attend, shall have neglected or refused to leave such note, then a like note signed by some one of the family in which such person shall have died, shall be received. Laws and ordinances, &c. by the Mayor, Aldermen, and commonalty of the city of New-York, &c, Chapter XVI. Sect. 1. 2.

selves to the trouble of procuring one from the physician. Nor is any provision made for obtaining the opinion of a medical man as to the reality of death, in cases of sudden decease.

ART. IV. *Observations on Metastasis.* By THOMAS HARRIS M. D. Surgeon of the Naval Hospital at Philadelphia. Read before the Philadelphia Medical Society.

This subject has engaged the attention of physicians, at distant intervals, from the era that medicine was cultivated as a science, to the present period. As anatomy and physiology, however, were imperfectly known to the ancients, their notions of the formation of metastasis were crude and fanciful. Hippocrates, it is true, was content to observe and appreciate the phenomena attendant on the translation of disease, without attempting to reduce his views to any fixed principles. The wild and extravagant opinions, which have been published under the sanction of other illustrious names of antiquity, are only calculated to prove, that imagination, rather than judgement, presided over their speculations.

The moderns more instructed in a knowledge of the parts which constitute our economy, have advanced hypotheses on the nature of metastasis, which, if not satisfactory, bear at least the impress of plausibility.

To the works of Cruikshank, Mascagni, and the anatomists of the present day are we indebted for a result so important. By their labours we are instructed, that the lymphatics form an inextricable net-work throughout the living system, by which a relationship is established between its remotest parts. He then who reflects on the arrangement of this net-work, or rather on the innumerable anastomoses of this system of vessels will no longer consider metastasis a hidden mystery. Such reflections indeed, will force us to infer with Reydellet, that it is thorugh the lymphatics alone, that disease can be translated.

It is known that the lymphatics are capable of conveying every fluid with which they may come in contact, without regard in any

degree to its quality. In the language of Bichat, they have the power to transport "either the principles of life and health, or the seeds of disease and death."

The celerity with which the lymph courses these tortuous canals, has been satisfactorily proven by the experiments of Magendie and Dupuytren. As disease then may pass through them with equal celerity, no sound objection can be made to this theory from the suddenness with which metastasis is sometimes affected.

Where the system is under the influence of disease, the sensibility of the absorbents may be prevented, so that the nature of their vital relations with the fluids change, and their actions increase in activity. In this condition too, they may not only carry their fluids with greater rapidity, but load themselves with others, for which, in a healthy state, they may have no affinity. By taking any other view of the subject, it would seem impossible to give even a plausible explanation of the manner in which metastasis takes place. That the nerves and blood-vessels may have some influence in determining the phenomena is probable, but that the absorbents are the principal agents engaged in the translation of disease admits I think of no question.

A variety of opinions have been advanced regarding the nature of the fluids which constitute metastasis. Some are of opinion that it is the same in character as that which existed in the seat of the primitive malady, and others believe that it is of a new formation. The ancients adhered to the former doctrine, and were persuaded of the perfect identity of both affections, from the total and rapid disappearance of certain abscesses, and their equally rapid formation in new situations. Many close observers have therefore come to the conclusion, that the original disease and metastatic affection are of the same nature, differing in symptoms perhaps, as the structure of the part differs, in which the disease is located. The matter which flows from the eyes, in that species of ophthalmia caused by a suppressed blenorrhæa, being precisely of the same consistence and appearance of that which flowed from the urethra, will tend in no small degree to corroborate this opinion.

In the Bibliothéque Medicale a remarkable case of purulent metastasis is stated on the authority of Dr. Butner of Berlin. A young man of twenty-two years of age fell upon a knife, and there-

by wounded one of the deep seated arteries of his hand. In consequence of long and painful efforts to arrest the hæmorrhagy, inflammation supervened, which was followed by an abscess in the forearm. He was now affected with slow fever and colliquative sweats, when the suppuration suddenly ceased, after which the patient voided abundant purulent stools. The latter affection was soon suspended—the suppuration reappeared in the arm, which again yielded to purulent evacuations. A third time the arm suppurated, but by prudent management the metastasis was prevented, and the abscess kindly cicatrized. This case, with many others that might be cited, inclines us to adopt the opinion that diseases are not changed in character by being translated.

Nature is thought to be the presiding deity in the formation of metastasis. Many physicians, it is true, have considered themselves degraded in being styled the humble attendants of so mysterious a personage, and have therefore denounced her as an officious intruder without either discretion or intelligence. Those who have attentively examined her operations during the progress of disease, and will then state that her efforts are useless, must certainly want in judgement, and those powers of discrimination, which are so essential to a successful practitioner. Of the precise manner, in which she governs the different changes in the system, no one I believe, can satisfactorily explain. Nor indeed is it altogether necessary in order to admit the existence of operations that we should be acquainted with, or that we should be obliged to illustrate the causes of them.

Reydellet has given a view of the subject which I think sufficiently ingenious to merit attention. He states that where there exists in the system a principle of disease, nature and the disease engage in combat; fever supervening, the event remains doubtful, but finally either the one or the other yields; then the phenomena change. If the disease triumph, it increases in violence, because the exertions of nature have been insufficient to oppose the incursions of the deleterious cause. If at any time the malady abate in violence nature immediately redoubles her efforts to overwhelm it, either by totally expelling it from the system, or by translating it to a situation where its ravages are less important. Nature always attentive to seize the favourable moment to drive out the evil prin-

ciple from the system, chooses those ways in which the resistance is least; that is, the parts least essential to life, thus determining a true crisis either by evacuating the foreign matter, or by a deposition of it on the exterior surface by metastasis.

This explanation of the operations of nature in the cure of diseases, is, as I have already stated, ingenious, and perhaps as satisfactory as hypotheses commonly are.

It has been noticed by Leclere, Ferriar, and others that of all the systems, nature prefers the skin and cellular tissue for her terminations; and hence the frequency of critical sweats and metastatic depots, near the surface. Such considerations force us to admit that nature performs no inconsiderable part in the cure of diseases. She teaches the physician to be regulated by her operations—if her efforts are too violent they must be calmed, if too feeble they must be rendered more active.

Leclere, though opposed to the opinion that nature assists in the cure of diseases, records the following interesting case. A lady of the Hague was affected with a tumour of the breast which had been thought cancerous, and for which Doctor Schweneké had employed many remedies without advantage. At length she lost all hope and abandoned the disease to nature. After a time she was affected with a tumour in the leg which rapidly increased in size and suppuration. The discharge being very abundant, the cancer in the breast diminished and finally disappeared. A physician of celebrity advised her never to suffer the ulcer which had produced so happy an effect to cicatrise; but becoming tired of its inconvenience, and feeling otherwise in robust health she urged her surgeon to heal it. He yielded to her importunities, cured the leg, and was rewarded by a reappearance of the cancerous tumour of the breast. Suppuration was again established in the leg, and maintained there by the application of caustic, which produced a complete cure of the original disease. The treatment of metastasis must vary according to its nature and situation. We can best qualify ourselves to form a judgment in such cases, by bestowing close attention to the connection and operation of diseases upon each other. Commonly, however, the management of such affections consists in recalling the disease to the primitive seat

when the latter is of less vital importance, than the part consecutively diseased, and vice versa.

It is by such principles alone, that we can resolve the question whether metastasis ought to be favoured or prevented. The enlightened physician will not only know the means by which to favour either the one or the other of these conditions of disease, but he will also know, that at times it will be no less his duty to abstain from any remedial interference whatever.

Doctor Parrish being long since convinced of the wisdom of such a course of practice, endeavoured to induce a metastasis in a consumptive boy by the introduction of vaccine matter into the glands of the neck. By this practice he succeeded in establishing an external scrofulous ulcer, which happily resulted in the cure of his patient of a form of disease which doubtless would have destroyed him in the course of a few months.

Other cases of a similar character were published by the doctor in the Eclectic Repertory of 1812.

The case of Hetty Killan is one of great interest, but is too long to be reported in a lecture which I already fear will exceed the ordinary bounds. I will simply state, however, that this patient inherited pulmonary consumption; and after the disease had progressed so far that her life was despaired of, the doctor with great judgment irritated the glands of the axilla, promoted suppuration by emollient poultices, and thus brought about a scrophulous ulcer, which completely cured her of her pulmonic symptoms.

When Dr. Parrish last heard from this patient she was in the enjoyment of excellent health.

There are periodical evacuations that result either from an hereditary predisposition, or are developed by incidental circumstances, but which, from long continuance, are so familiarized with our organs, that they become at length new functions indispensable to health. These evacuations vary to infinity. Sometimes they are habitual and abundant sweats; at other times, they consist in either hæmorrhages, or purulent discharges, by the natural emunctories.

If such complaints are known to be of some duration, or are suspected to be inherited, the only service required of the physician under such circumstances, is to prevent a metastasis. The

ill effects resulting from suddenly arresting these drains, might be illustrated by a thousand cases drawn from the best authorities.

Raymond mentions that a nun had been long affected with a purulent discharge from her eye-lids, which at the age of twenty-two yielded to copious and fœtid sweats from her legs and feet. While she submitted to this inconvenience, her eyes continued strong and healthy. At length, however, the sweats so increased in quantity and fœtor, particularly during the summer season, as not only to be offensive to herself, but to inconvenience those with whom she associated. In order to remove a complaint in every way so disagreeable, she bathed her extremities in astringent washes, which arrested the cutaneous discharge, but brought on an obstinate epilepsy, with which she was affected, at intervals for three years. In consequence of one of those changes of predisposition, about which we know so little, she was relieved of her epileptic symptoms, and became affected with scrofula in the neck and axilla. For want of proper management the disease was translated to the lungs, of which she shortly afterwards died.

This is a most instructive case, and one which should counsel all officious physicians to abstain from interfering in any case of metastasis so situated as not to injure the important functions of the system.

Reydellet records several cases of nearly the same character as the above, and in which the suppression of the perspiration was attended with equally unhappy consequences.

In March last, I was called to visit a lady affected with severe pain in the back and head, with great depression of spirits, and occasional symptoms of hysteria. I had her under treatment nearly a month without being able to lessen, in any degree, the violence of her symptoms. About this time she informed me, that since her indisposition she had gotten rid of an old companion, (as she termed it), which was extremely offensive both to herself and friends. Upon inquiry, I now found that she had originally laboured under a scrofulous tumour of the groin, which, about three years since, had yielded to copious and fœtid sweats of her feet. With this inconvenience she enjoyed perfect health, until she had received her recent cold, which she supposed was obtained by getting her feet wet.

Recollecting the case of Raymond, I felt convinced that the

proper indication of cure consisted in inviting the return of the perspiration to her legs and feet. For this purpose pediluvia, the vapour bath, and emollient poultices were used with the completest success. Her fœtid sweats, health, and good spirits, returned together.

Almost every attempt to cure hæmorrhages of long continuance is attended with unhappy consequences. There are few physicians in extensive practice, who have not witnessed examples of this kind. Dyspepsia, hepatitis, consumption, epilepsy, or apoplexy is produced by metastasis, and which can be permanently cured in no other way than by inviting a return of the hæmorrhoidal disease.

There is no disease so subject to displacement, and of consequence to metastasis, as gout. To cite ordinary cases of this kind would be useless, as they are so familiarly known to every practitioner.

Ferriar records some curious cases of gouty consumption, which I think merit attention; and which in most instances he cured by the exhibition of cordials, and thereby repelled the disease to the extremities.

Venereal metastasis is not unfrequent. Hunter, Bell, Artruc, and others, have published many interesting cases of this nature. Reydellet states that he had a young man under his care affected with gonorrhœa, who, under the ordinary treatment appeared to be doing well. Being obliged to expose himself in cold damp weather, the gonorrhœa suddenly ceased, and an inflammation of the right eye supervened. On this metastatic affection he exercised all his skill, but without being able to even ameliorate its violence. At length, however, the discharge from the urethra spontaneously returned, when the pain and inflammation of the eye immediately subsided.

Dr. Plenk, states that he was consulted in a case of ophthalmia of this character, for which he advised his patient to contract a new gonorrhœa. The patient expressed no reluctance to follow the advice, and was compensated by a rapid and complete cure.

Cutaneous affections of long continuance should be treated with great caution. Ferriar notices "a remarkable case in which epileptic fits were produced by the retrocession of the itch, in conse-

quence of some external application. In this case, the epilepsy resisted all the usual methods, and was only cured by reproducing the itch." Mania and hypochondriasis have been produced by the same causes, and cured by the same means.

Puerpural fever is, I have no doubt, a mestastatic affection, as it is generally attended with a suppression of the lochia. By taking this view of the disease, the powers of turpentine as a remedial agent may be readily explained. This medicine is known to act with great force on the pelvic viscera, by which means it repels the metastasis to the organ primitively affected, and thus produces a return of the lochia.

The foregoing cases and observations furnish abundant evidence of the importance of attending to metastatic phenomena in the cure and management of diseases. They show too, that nature has presented excellent practical lessons, which point out the true method of treatment, and enjoin on every judicious physician to profit by her suggestions. He should lay it down as a rule of practice, in every chronic disease, to favour a metastasis to the surface.

When the disease already exists in this situation, it will be no less his duty to guard against a translation, and thus consent to

> " ——— rather bear the ills we have,
> " Than fly to those we know not of."

ART. V. *History of the Yellow Fever, as it appeared in Norfolk during the Summer and Autumn of* 1821. By Dr. ROBERT ARCHER, Health Officer.

PREVIOUSLY to the memorable fire of 1804, when the greater part of the lower section of the town was burned, Norfolk had almost annually endured the scourge of yellow fever: and whatever may have been its cause, that cause terminated with the conflagration. Since that time until the present no fever of a malignant character has appeared amongst us; and an exemption, so long enjoyed, induced the delusive hope that we should still longer have escaped its ravages: but, in the midst of our congratulations, that

whilst our sister towns to the north and south are yearly suffering under its influence, it has passed us by, we are again visited, as if to show that the works of nature, though slow in progress and inscrutable in their operations, are nevertheless certain in their event; and as surely as the cause of disease exists, so, sooner or later, will its effects be developed and continue, until some natural or artificial agency be interposed to arrest them.

The yellow fever made its appearance in Norfolk on the 1st of August, and continued to rage with more or less violence until it gradually and imperceptibly yielded to the frost about the 1st of November. During that time there died, as nearly as can be ascertained, 160 persons, of whom 53 were females, 30 negroes, 106 adults, and 60 foreigners. Europeans, and particularly the Irish, were most obnoxious to the disease: next to these, the natives of the northern and eastern states. The emigrants from the West Indies suffered comparatively nothing, and very few of the old inhabitants were affected. I did not meet with the disease in any individual who had had it before.

The last winter was unusually severe; and Fahrenheit's thermometer at one time, during the month of January, fell to 10; which was several degrees lower than it had been for many years before. The spring was very backward and wet. We had a snow storm on the 18th of April, and the summer set in very warm in June.

	Fair Days.	Prevailing Winds.	Thermometer. Highest.	Lowest.	Medium.
In January there were	22	N. W.	68	10	38.8
February	10	S. W.	68	40	50
March	18	S. W.	72	30	50.6
April	15	S. W.	70	42	59 9
May	17	S. W.	80	59	68.8
June	17	S. W.	89	64	76
July	14	S. W.	88	70	77

On the 20th of July, a vessel from Point Peter, Guadaloupe, laden with rum, sugar and molasses, arrived in the harbour. Having discharged her cargo at an upper wharf, her bilge water was pumped out on the dock between Southgate's and Warrin's wharves, which was found to be so putrid and offensive, as to render it ex-

pedient that the doors and windows of a neighbouring house should be closed, in order to exclude the effluvia arising from it. This and Southgate's warehouse were about equally distant from the vessel, say 15 or 20 yards, one on the east, the other on the west side of the dock.

On the 1st of August, Mr. Price, acting as clerk in the warehouse, was taken sick with fever, strongly marked with symptoms of malignancy, and died on the ———. On the same day a negro woman, cook to the family occupying the other house, was attacked and died on the 9th. On the 4th, two ladies of the family sickened, the elder of whom died on the 10th. About the same time a boy, aged 16, and an infant in the same family were attacked, but both recovered. On the 9th, the lady of the house had a slight attack, from which she soon recovered; and the only one who escaped of the whole family, seven in number, was the master of the house, whose duties fortunately took him from home at the time the bilge water was discharged. Young Piercey, who had assisted in pumping the vessel, and a boy by the name of Andrews, who had frequently been about her at the time, both sickened and died, one about the 15th day of the disease, the other within 48 hours after the attack.

It is evident therefore, that the effluvia arising from the bilge water, was the immediate cause of disease in every instance that has been recorded; for every individual had been exposed to its influence, and almost every one who had come within its atmosphere, was more or less affected by it.

The cause being removed, it was expected the disease would have terminated; but not so. On the 10th of August it appeared in Woodside's, lane, distant from the aforesaid dock only the width of Southgate's warehouse, or about 60 feet. This lane is bounded on the east by another very filthy dock, for it serves as a common sewer for all the offal of the neighbourhood, and at low tide is bare and exposed to the action of the sun for a considerable distance from its head. The residents upon this lane were mostly Irish, recently emigrated, and persons in the lowest circumstances, addicted to filth, intemperance and every species of debauchery, and consequently the fittest subjects of disease. The fever extended gradually to Water-street, first around the head of the dock last

mentioned, from thence to the lower end of the street, in a block of wooden buildings under which the tide flowed, and equally unclean with those on Woodside's lane; and in a very short time, embraced the whole section of the town, bounded by market square on the east, Main-street on the north, and the river on the west and south. It was almost exclusively confined to these limits, although a few insulated cases appeared in more remote parts of the town, most of which could be traced to the infected district; but before its termination the virus had become so attenuated and diffused, that several persons, who had no communication either with the district or patients, removed from it, were infected.

I do not wish to be understood as subscribing to the doctrine of contagion and importation of disease as generally implied, when I say that the vessel from Guadaloupe had some agency in its production in the present instance. A foul air generated on shipboard, and one brought from a foreign port are two distinct things: but that bilge water, vegetable and perhaps animal matter and the like, whether of foreign or local origin, under certain circumstances of atmosphere, temperature, &c. are capable of engendering disease, no one, I am persuaded is prepared to deny. For this reason our quarantine restrictions which are absurdly severe upon passengers and crews, (as in no instance that has come within my knowledge, has the yellow fever ever been communicated from the patient to the attendant) should be more strictly and scrupulously enforced with respect to vessels and cargoes.

I cannot say that we should have escaped disease, had not the aforesaid vessel come into the harbour; on the contrary I am satisfied, that if produced by filth, ample cause of its production existed at home and has existed for many years; nevertheless I think it highly probable that the morbific miasmata, if they would not have remained dormant, might have been inhaled with tolerable security, at least for some time, had not this new exciting cause given a spring to their action, or supplied the little something that was wanting, to qualify them for engendering that horrible malady. I think we may fairly come to this conclusion by comparison of dates, places and circumstances, although it is possible but not probable, that such a coincidence of events should have taken place, as that the same disease should be produced at the same time, and at

the same place from two such different and distinct causes. More epecially when we know, that no fever of similar character, had appeared there for 18 years before.

If a filthy dock and filthy tenements were alone adequate to the production of yellow fever, how comes it, that such a length of time should have elapsed since its appearance? No one will pretend to say that our town is more unclean now than it has been for 18 years past; on the contrary we know that our police has been much improved; that most of our streets, and alleys, particularly in that district, have been within a few years paved and many glaring nuisances removed: the houses also in which the first cases appeared was remarkably well kept, detached from any other, and not within forty yards of any family residence. No one will maintain that this was the filthiest part of the town, and what good reason is there to suppose, that the fever would originate here, sooner than in Calvert's lane or on Town point? The density of population on Woodside's lane can be no argument in favour of it, for the other places were equally thickly inhabited: besides, when our commerce was thriving and that whole district overrun by sailors and strangers, no case of malignant fever was known there. We must therefore look to some other cause, besides a local one, to account for its existence. What that is we will not pretend to say: the question probably will never be decided: but we know, that what will produce yellow fever at one time, will not at another even under apparently the same circumstances; and in spite of all our attention to police, it will sometimes shew itself in the cleanest places, whilst others less so, are exempted from it: we know too that vessels have frequently discharged their bilge water at our wharves, with perfect safety, and we see the effects of it, in the present instance.

It seems therefore that a certain state of atmosphere is necessary to originate, as well as a peculiar constitution of it is to extend and multiply the disease: for the same atmosphere that generates, does not always render it epidemic, although this appears to have been the present case, as it was by no means confined to New York, but extended to Portsmouth and Gosport, and a very considerable part of the State, as well on the sea board, as higher up the country.

This vessel had a passage of 17 days from Guadaloupe, in the month of July, with a cargo of rum, sugar and molasses. She is

reported to have been very tight, and it appeared in evidence on the captains trial for violating the quarantine law, that she had not been washed out for a considerable time, although he declared that it had been done on the day of his arrival. We can easily imagine then, what must have been the state of the bilge water; for every one conversant with the subject, knows, that even with the greatest precaution of frequent pumping and washing, when combined with molasses it creates a most insupportable stench. The vessel making comparatively no water, rendered it unimportant in the eyes of the captain, whether she was pumped or not. It probably therefore, was not done for 6 or 8 days before her arrival: 7 days elapsed after that, which were employed in discharging the cargo, before it was done, making in the whole 13 or 15 days in the month of July, at a time when the Thermometer in Norfolk was never below 70 and sometimes as high as 88, that the bilge water, saturated with vegetable matter, had been confined in the vessel's hold. Here is a cause then, adequate to the production of any effect, that might be expected from the process of vegetable putrefaction: and it is not unreasonable to suppose that this concentrated virus, capable of producing the deadly consequences that we have witnessed, should have had some influence in modifying the atmosphere, already pregnant with poisonous miasmata, so as to generate disease.

No very material change was observable in the progress of the fever, until the 3rd of September: although it appeared to be in a manner influenced by the state of the weather, and was more or less violent, accordingly as the Thermometer rose or fell. On that day we were visited by a hurricane from the N. E. shifting soon after to N. W. and accompanied with torrents of rain. It exceeded in violence any that had occurred within the memory of the oldest inhabitants and continued about two hours and a half. The tide rose to a very unusual height and covered all the wharves and lower streets, particularly the infected district. Care was taken to remove the water from the cellars and other low places that had been inundated, and lime was profusely scattered over them. This precaution I have no doubt, prevented much distress that would otherwise have ensued. The existing cases did not seem to have been much benefited by the storm. It evidently however had a tendency both to reduce the number of new cases and to mitigate the violence of

their symptoms, and we had reason to expect its entire subsidence in a short time: but about the last of the month it again began to increase, and though generally of a milder character, several cases of extreme malignancy occured.

No age, sex, or constitution, as before seen, appeared to be exempt, although foreigners, and particularly the Irish were most subject to its attacks. The blacks also suffered greatly from it. Intemperance was always a predisposing cause, and it was very often excited by getting wet, fatigue and exposure to the sun. Although mostly confined to a certain district, still after the manner of epidemics, it appeared to have some influence in changing the character of our ordinary diseases: and it was difficult at the first onset to decide, whether the patient laboured under that or an autumnal remittent, for it frequently assumed both the remittent and intermittent type. You had nothing to guide you but the relative violence of the symptoms of the two diseases, and this was a mere negative inference, for if they were very prominent, the case was easily distinguished, but on the contrary if not so, we could pronounce with no degree of certainty, that it would not turn out to be of extreme malignancy. In fact so proteiform was the disease, that we are unable with any accuracy to detail its progress, much less can we ascribe to it, any undeviating pathognomonic symptoms.

Its attacks were generally preceded by lassitude, loss of appetite, slight pain of the head, back and extremities, which being the precursors to a more serious and dangerous state, were looked upon as premonitors to a prophylactic course of medicine, and the disease was often warded off, before it had time to fix itself upon the patient. At other times, they would be so sudden, that without the least warning and frequently after retiring perfectly well to bed, he would awaken with a chill, succeeded by a scorching fever, excruciating pain in the head and small of the back, and soreness of the muscles of the legs and arms: the eyes would be painful, watery and very sensible to light, the face, breast and neck of a deep red hue, respiration laborious, great thirst and furred tongue; the whole surface communicating to the fingers, an intense burning heat, the pulse sometimes full and hard, at others, small, soft and frequent; the bowels constipated, urine high coloured, nausea, sometimes copious bilious vomiting from the first attack, pain in the pit of

the stomach, coma, tremulous motion of the tongue when speaking, &c.

When these symptoms run high in the commencement very little hope could be entertained for the patient's recovery. Of the whole catalogue, the red, watery and muddy eye, was the most unfavourable; this could not be mistaken, and was the sure index of the virulence of the disease. The tongue was generally covered with a thick ash-coloured coat, which about the third or fourth day, assumed a brown or black colour in the middle, that gradually extended over the whole surface. It now became dry, much contracted and with difficulty thrust beyond the teeth. In the month of October and latter part of September, the white crust was not as often met with, but in its stead a brown fur appeared, and in a few cases it remained perfectly clean and fair until the active stage of the disease had subsided, which was generally from the second to the fourth day.

About this time, the eyes and skin began to assume a yellow tinge which was always more unfavourable, the earlier it appeared: this however, was not a constant symptom, and the patient sometimes died, without the least discoloration. The vomiting which in the first stage was bilious, now became glaring, stringy and deposited a furfuraceous or floculent sediment of a grayish colour: this was the commencement of black-vomit which appeared in no way to differ from that, except in the increase of quantity and darker colour of the sediment; it was frequently however mixed with blood, and then had more the chocolate or mahogany appearance. Great debility, hæmorrhage from the gums, fauces and nose, generally attended this period of the disease, and in one case, which proved fatal, hæmorrhage from the eyes; the tongue and teeth were crusted with a viscid black sordes and the lips excoriated, yielding a bloody sanies and covered with a thick black scab. The skin which at first was hard and dry, now became of marble coldness and bedewed, particularly about the forehead, breast and arms, with a clammy sweat. The evacuations *per anum* resembled the matter ejected by vomiting and was more or less mixed with blood; delirium, cessation of all pain or morbid feeling, hiccough, a strong and incontrolable desire to get up and walk about, which was almost an universal symptom, were manifested: the countenance now

became dreadfully haggard, the urine and fæces passed involuntarily, the pulsation at the wrist ceased, and one or more convulsions generally closed the scene.

These were the circumstances that usually attended the disease, although their order was frequently changed, and sometimes reversed. In a few cases, the black vomit came on within 8 or 10 hours after the attack, and was sometimes unattended by any previous bilious or mucous discharges. In a great number, no black matter was ejected at all. Two cases of the "passio iliaca" occurred, both of which terminated favourably; and in one case the patient, a soldier, was relieved from post with an ague. No reaction took place, his skin continued of a deadly coldness, his pulse ceased, he had no vomiting or other prominent symptoms, complained of no pain or uneasiness; on the contrary, expressed himself as being perfectly well, and retained his mental faculties to within a very short time of his death, which took place about 24 hours after the attack.

Petechiæ were very rarely observed; and in only one case that occurred within my observation, was there any remarkable suppression of urine. This was an "ischuria renalis." It continued nearly four days before the patient's death, and at no time, during that period, was there the least pain or fulness about the region of the bladder. She was a negro woman, about 40 years of age, and the first person attacked. In one case that terminated fatally, the disease assumed all the characteristic symptoms of apoplexy.

The quantity of fluid thrown from the stomach was in some cases incredible, and can only be accounted for in the manner suggested by Jackson: for whenever the vomiting was copious, the skin was dry and hard; and if by any means the humours could be diverted from their course and determined to the surface, so as to produce a free diaphoresis, it would generally cease; such was the intimate connexion that existed between these two organs.

As an evidence of the extent to which the predisposing causes of this fever operated, the blood taken from a healthy person generally exhibited a yellow, bilious serum, which was easily discernable as it trickled down the sides of the basin, and the intensity of its colour was pretty regularly increased, as you approached the infected district. Whether this was produced by an absorption of bile into

the circulating system, or from an imperfect secretion of it in the liver, I am not prepared to say; but should rather adopt the first opinion as examinations *post mortem* always find the gall bladder containing a quantity of dark inspissated bile, and the evacuations from the stomach and intestines exhibit large portions of the same fluid; which proves that although the hepatic functions were diseased, the quantity if not the quality of bile, was fully equal to that secreted in health. I think therefore we can with more plausibility, ascribe the yellowness of the skin to bilious suffusion, than to a broken down state of the blood, or a stagnation in the capillary system, as suggested by Johnson: For the fluid discharged after the application of a blister, is nothing more than the same serum coloured with bile, which produced the yellow colour of the skin; and that broken down state of the blood could not take place without a considerable access of fever or some other violent cause. On the other hand, some of the most malignant and aggravated cases as before observed, were unattended with any discolouration of the skin, even such as were accompanied with black vomit, hæmorrhage from the mouth, nose and arms, which would not have happened without a broken down, or as is commonly called, dissolved state of the blood, and a stagnation in the capillary system would have been more likely to produce petechiæ or a livid discolouration, than a yellow one.

Unfortunately, many persons who had removed from the infected district, persuaded themselves, from a favourable change of weather about the first of October, that all danger was over and returned. Most of these paid for their temerity, as their temporary absence only seemed to have prepared them for becoming victims to the disease. Several who had contracted the ague and fever in the surrounding country, who had been well evacuated, and were regularly continuing their tonics, were attacked and died. There was no way by medicine or otherwise, of preparing or fortifying the constitution to resist its power. Salivation even offered no security, and the only means of escaping the disease, was to get beyond the atmosphere that engendered it. As to the methodus medendi, no system of therapeutics with which I was acquainted, seemed to afford any successful or satisfactory means of treatment. What would be advantageous to one case, would evidently do harm,

or be inert in the next; even if administered under like circumstances, and in the same stage of the disease. The practice however, which I found most successful, I will endeavour to detail.

Bleeding was always attended with the happiest consequences in the early stage, if the pulse was full and hard, the countenance flushed and respiration impeded; but could not be safely prescribed after a lapse of 24 or 36 hours. When the pulse was small and quick, although other symptoms of high febrile action were present, it had a tendency to aggravate the disease by inducing debility, which was always an unfavourable circumstance, without diminishing the fever.

If bleeding was thought inadmissible, and the stomach not disordered, which was rarely the case, an emetic of tart. antim. had a very good effect: for after its operation, it usually acted upon the cuticular system, which was much to be desired; but as a general remedy it could not be used; as when nausea prevailed, it was apt to increase it, even after its operations had ceased.

When bleeding and emetics were not indicated, calomel alone, or combined with jalap, so as to purge briskly, was found to be most appropriate; but such was the atony of the digestive system, that an ordinary dose would make no impression upon it. I have given 30 grs. jalap and as much of calomel, followed by an ounce of sulph. sod. and a strong infusion of senna, without producing any effect. I have also given 30 grs. of the submuriate and 10 every hour for 6 hours, with no more success: and I have known upwards of one ounce taken within 36 hours, with but moderate effect, and no ptyalism produced.

As the season advanced, this insensibility to the action of purgatives diminished, and in a few weeks, 10 grs. of jalap and calomel would do more than five times that quantity would have done at first.

After evacuating the stomach and bowels, the great object was to produce a solution of the fever, by a copious and continued diaphoresis. By whatever means this was affected, the success always repaid the efforts that were employed. This was the natural crisis, and the truth of the Aphorism of the Father of medicine. "Quo natura vergat eo ducenda," was never more fully exemplified. If the skin was hot, cold immersion or aspersion generally

succeeded, but if that failed, the body was well rubbed with warm vinegar and brandy, or the warm or vapour-bath was employed at the same time, that hot lemonade, balm or sage tea were freely drank; the patient was then well covered in bed, and the application repeated as often as necessary; by these means the fever was often cut short, before it had time to do much damage, and the patient soon recovered.

As before observed, the sympathy between the surface and stomach was so great, that even in the last stage the vomiting was frequently checked by producing a determination to that emunctory. Antimonials, particularly the James' powder, when the state of the stomach would authorise it, combined with the submuriate of Mercury, appeared to have a very good effect; but the danger attending its administration would more than counterbalance the good results that might be expected from it. When the active stage of the fever had subsided, the infusio serpentariæ was a very good auxiliary to the spirituous frictions or warm bath, in keeping up the cutaneous discharge. During the continuance of the fever the bowels were kept open by means of some gentle laxative, and mild injections were freely used. If nausea or vomiting existed, a large blister applied to the epigastric region had a very good effect, more especially as it tended to relieve the distressing pain that affected the part. But of all applications which have ever been made to arrest the vomiting, the internal exhibition of charcoal, is to my mind decidedly the most important. In whatever stage of the disease administered, it was attended with the same success, and even after the appearance of black vomit, it was rarely that more than the third dose was required to arrest it. I wish we could say, it invariably prevented its return, but I am satisfied that some of the most desperate cases were cured by it when all other remedies had failed. It appeared to act immediately upon the stomach, by allaying its irritability and carrying off by stool, the black matter, which was found to be perfectly free from odour; it also by its tonic or antiseptic property, so altered the secreting function of the stomach, as to prevent its farther formation. I used it in the first case that occurred, and although it terminated fatally, its advantages were so manifest, that I can never regret the freedom with which I afterwards continued to employ it. Independent of any other pro-

perty, its anti-emetic virtues will always intitle it to a conspicuous place amongst the cata ogue of medicines, useful in yellow fever, as it gives an opportunity for throwing in more powerful agents, during the armistice that is created between the constitution and the disease. The dose was a tea spoon full every hour or oftener, *pro re nata*, in a little syrup or other convenient vehicle.

As an ordinary drink, soda water highly charged answered best, for it quenched thirst, at the same time that it calmed the stomach, from the carbonic acid gas with which it was impregnated. Porter and cider seemed to act in the same way but were not so grateful. Ice lemonade was also freely given. When there was much determination to the head, blisters to the neck or forehead, and pounded ice constantly applied to the part, were attended with the happiest results. Opiates could rarely be administered, as they had a tendency to induce stupor and aggravate the nervous symptoms. In the latter stage, when the febrile symptoms had subsided, the infusio cinchonæ, with a large proportion of serpentaria, was freely used. The most stimulating frictions, with blisters and sinapisms, were necessary to rouse the system and recall the circulation to the surface. The spir. terebinthin. and tinct. capsici, were preferable to most other rubefacients. I saw very little advantage result from the internal exhibition of the turpentine. The cerussa acetata, in one or two cases, appeared to be useful, and a solution of the nit. argent. succeeded very well in arresting vomiting in two instances, when the charcoal had failed. In fact, any thing that would make a direct attack upon the stomach, and change its action, would always produce a beneficial effect. To this end, the tinct. cantharid. was given; and it is worthy of remark, that although cantharides, in its various forms, was used in the greatest profusion, not more than two or three cases of strangury were observed.

An accidental circumstance, which occurred in a patient under my care, affords additional evidence, if more be wanted, of the utility of cold bathing in yellow fever. He was an old man, 60 years of age, and in the third day of the disease. The febrile symptoms ran very high, he had excessive vomiting, and complained of great distress about the head. A cathartic was prescribed, and in preference to remaining in his chamber, he betook himself to a neighbouring wharf, to wait until it had ceased operating. During its

operation he fell into the river, and with difficulty was snatched from a watery grave, by some person passing by at the time. He was taken home and put to bed; a profuse perspiration ensued, his fever left him, and he found himself next day perfectly recovered.

ART. VI. *Some Account of the late Epidemic Bilious Fever, as it appeared in Surry County, Virginia, during the Fall of* 1821. By W. H. FINCH, M D.

PREVIOUS to approaching the history of the disease which appeared within the circle of my practice, and the treatment I pursue, I conceive it necessary to make a few remarks on the local situation of the country, the seasons, and the state of health of the inhabitants, for some months preceding the appearance of what is *called epidemic*; but what (as will be seen in the sequel) I only consider a form of our æstal and autumnal *endemic*, so highly aggravated as to assume *novelties* and *peculiarities* of character, which would seem to entitle it to the former appellation.

Surry county is bounded on the north by James River; on the west in part by a creek flowing into the James, called the Upper Chipoax, and partly by a line dividing it from the county of Prince George; on the south it is bounded principally by *Black-water Swamp*, a considerable stream, but in part by a line dividing it from the county of Sussex; and on the east by *Soynes Creek*, flowing into James River, and in a line dividing it from the county of Isle of Wight.

In the northern section of the county, immediately on the river, the land is quite elevated and very much broken; the banks of the James being generally, but more particularly in the upper half or three-fourths of the county, very high, and intersected with numerous deep and extensive ravines. Between the above mentioned Chipoaz Creek on the *west*, and Soynes on the *east*, there are three other creeks of some size, making into the county to the distance of from three to five miles, besides several small inlets of much less extent. Attached to these water courses, there are considerable

quantities of *marsh*, which, but for the large growth which intervenes between them and most of the dwellings of the adjacent inhabitants, aided perhaps by the slight brackishness of the tide water and its usual northerly situation, would, as a natural effect, produce great unhealthiness of this portion of the county. The advantage, however, afforded by the above natural circumstances, are, I apprehend, more than counterbalanced by the erection of a number of mills, with extensive ponds, which are subject to become dry during the dry seasons of the year; thereby exposing a large extent of moist surface, with more or less of vegetable and animal matter, as a fruitful source for the generation of destructive miasmata. There are no less than six or eight of these establishments situated at the heads of these creeks.

The middle section of the county, embracing an extent of ground of from four to seven miles in width, and running the whole length of the county from east to west, is more flat; the soil being rather of of a moist, cold, and intermediate between a light and stiff quality. This quality of soil prevails more or less throughout the whole southern section of the county, excepting some narrow tracts which are more elevated and sandy. But what is of more interest to my purpose, it is to be remarked, that both of these sections, *middle* and *southern*, are intersected by several large and flat swamps, which make their way to James River, or Black-water Swamp, but most of them to the latter; and there are, also, several mills with ponds seated in these sections. Fortunately, these swamps are mostly rendered innocuous by heavy growths of timber, which protect them from the evaporating power of the summer's sun. Black-water, which is so large a stream as to have been sometimes called a river, but which has no flowing of tides as high up as this, has large extents of sunken land in its course, being in some places divided into two separate streams, which are from one to two hundred yards a part. This, however, is also mostly protected from the sun by heavy growths.

From the above description, one would naturally draw the inference, that about the junction of the northern and middle sections of the county would be generally the most unhealthy part.—This is, I believe, the fact; at least the experience of the two years

that I have been engaged in the practice, has irresistably established this opinion in my mind. Nor will it be difficult for any one to see into the cause of its being so, when he takes a topographical view of the country. Some of the situations immediately on the river are sickly, but most of them are the reverse. Those near the stage road, which passes perhaps from three to five miles north of the middle of the county, I have found to be mostly visited by disease.

I now pass to a few remarks as to the state of health of this county since the commencement of the present year, which will lead me to the immediate subject of this communication.

The latter part of the summer, and the whole of the autumn of 1820, were unusually sickly, but on the approach of winter the people became healthy, and from that time until the last of September of the present year, embraced a period in which there was by far less sickness than the same seasons had presented for several years. Whilst we saw so much published of the dreadful fatality in the western and middle counties of this state, during the months of July, August and September, and of the prevalence of a malignant fever in Norfolk and elsewhere, the inhabitants of Surry were nearly as healthy as they usually are in the most salubrious seasons of the year: at least they were so within the circle of my practice, which embraces the principal part of the northern and middle section of the county. The winter had been very hard,—the spring rather backward, but not very fluctuating, and tolerably seasonable in the latter part of it. The summer was unusually hot, but very seasonably presented with refreshing showers until the first week in August, from which period until the third of September the weather was extremely dry. Nevertheless, vegetation seemed not to suffer as much from the heat and drought as might be expected.

On the third September, a violent gust, with immense torrents of rain, came on, after which the earth was kept pretty wet until October. It may not be too trivial to remark, that during the few weeks of drought there was the greatest collection of insects upon the trees that I recollect to have ever seen, particularly a small species of catterpillar. These latter were so numerous as to destroy entirely the foliage of two or three species of trees, that grow very

generally and luxuriantly with us. In some situations where these trees abounded, the scene produced by their webbing was such as to strike the mind with a peculiar melancholy, by causing a recollection of the destructive visitations of locusts, &c. which we read of in ancient history. To these the wind and rain on the third September produced great destruction.

During the month of September there were a few sporadic cases of bilious fever, which, however, were not more violent than usual. But between the 1st and 10th of October, the cases of disease increased very rapidly in number, and became of a much more alarming character. The weather was unusually warm for the season, whilst it was very dry and sultry. I had read frequent publications in the papers relative to the fever prevailing with such violence, and creating such alarm in other sections of the country; but I had not, previous to October, met with a case whose symptoms corresponded with those given in these publications. I had, however, from the accounts, fully decided in my own mind that the fever, as it prevailed, was very much misconstrued in its character, and was *by no means* entitled to the term typhus, which was generally given to it. And I was equally under the conviction that the Brunonian practice, which in this state was mostly pursued, was, least of all modes, applicable.

I have always believed with the celebrated Doctor Rush, that different cases of disease, but particularly of fever, only varied from each other in states or forms, which variations were dependant upon correspondent varieties in the nature and application of the causes, the predispositions, (natural or acquired) of patients; their habits, idiosyncrasies, and states of system, greatly subject to change; and the variety of relations existing in different cases between the violence or power of the agent, and the ability of the vital and sanative powers of the systems to resist its operation, &c. &c. In short, I conceive the circumstances, regulating or varying the character of fevers, to be so innumerable as to do away the possibility of any correct data and distinctions being established, upon which to found a nosological arrangement, that can be of any advantage to the *practitioner*, and consequently if any is adhered to in practice, the consequences are injurious. On this subject I have been greatly enlightened, by the reasoning advanced,

and the divisions laid down by Doctor Armstrong, in his able work on Typhus Fever. He divides the causes of fever into three species, viz: *contagion*, marsh miasmata, and the ordinary causes of cold, intemperence, &c. &c. And he contends, that from whatever cause the fever is produced, it always partakes of *one* of three forms or states, viz. state of *simple excitement*, of *inflammation*, or of congestion.

I need not proceed to give the distinctions drawn by this able writer, between these three states of fever, and will only add, that with equal force of argument, he has maintained, that the ultimate effects of fever (from whatever cause proceeding), are the same; as oppression, disorganization, and loss of function in some of the viscera. By applying these rational ideas to the disease which prevailed this summer and fall, all difficulty as to its real character may be solved. The ordinary bilious fever of this climate, I believe may take on the three several states or forms, which Doctor Armstrong has so successfully proven to exist in typhus. When it puts on the form of mere *simple excitement*, the patient may, by an emetic, a mercurial purge, or perhaps some mild cathartic &c. be relieved in a few hours, if the remedy is resorted to early. On the contrary, the *cause* producing the disease, and the susceptibility of the system to its impression, may be so great, as to cause the stage of simple excitement to be so momentary and transient, as to induce at the very onset symptoms of inflammation; whilst by a still greater power of the causes, (predisposing, remote and proximate), the disease may be ushered in at once, with all the dreadful and destructive symptoms of *congestion* itself. This latter circumstance I conceive to have existed in those violent cases, of what I would call *congestive bilious fever*, that have spread terror and death where they have occurred. In my own practice, I had for the greater part of the month of October, cases of all three descriptions at the same time. And whilst the two first forms of disease, constituted the greater number by far, I attended several of as violent cases of congestion, as could possibly have occurred, without deaths being the immediate consequences. Some partook of both the simple and inflammatory forms, others of the inflammatory and congestive, and some from the earliest stage, of the latter character alone. This latter one being the disease which has produced so

much fatality amongst us, and the one only on which I consider myself requested to communicate my experience. I shall now confine myself to it particularly; and as I have already been too prolix, will in as few words as possible, describe its symptoms without any reference, but to my own observation, and give, as concisely as possible, the practice I pursued, with such additions as I think might have been advantageous. The *causes* of this disease I shall say little of, in as much as I consider them to be the same, as of the ordinary bilious remittent and intermittent fevers, only presented in a more concentrated state, or acting upon a system, *throughout*, or in part, greatly predisposed, or debilitated by variety of causes. But I may be asked, if these violent cases of fever are the effects of marsh miasmata; why have we not heretofore had them; since there is no good reason for supposing that there has been any increase in quantity or virulence in the causes of bilious fever? To this I would answer, however, that I believe that there have been *every year* some cases of this description. I saw two or three last year, which, though inferior in the degree of congestion to the cases I have seen this fall, evidently partook of that character. And I would add, that reasons for believing that there is an increase in the quantity, or virulence of the cause of bilious fevers, are not altogether wanting. Doctor Franklin I believe was of opinion, that a half cultivated country was more sickly than either a wilderness, or a country in the highest state of agricultural improvement. Believing this opinion strictly correct, and considering the present state of agriculture in Virginia, (particularly in the eastern part) to be not farther advanced, than to an intermediate point between the natural wildness, in which the first settlers of the country found it, and the most improved state of cultivation, I cannot avoid suggesting this fact, as auxiliary in accounting for the increased violence of disease. We have large quantities of land open, and that usually, (or rather always) around the dwellings of families. These fields, when not cultivated at all, are fruitful sources of disease, by affording so much vegetable matter of tender texture for decomposition in the fall, and when cultivated, it is so loosely and imperfectly done, as to render the matter worse. Could proper rotation of crops be introduced into our system of farming, so as thereby to do away the destructive system of gra-

zing, and of taking into cultivation *too much* land, I am confidently of opinion, that the local salubrity of our atmosphere would be improved. The scientific and complete farmer, will suffer no evaporation of vegetable or animal matters on his farm, but will commit it all *in time* to the soil for the creation of new life and vigour in succeeding crops. It is not for us to hope for the attainment of this degree of perfection; but I am forced to believe that the nearer we could approach to it, the more would we contribute to our health. I would say, *for health*, let that part of the country which is not cultivated be in a state of wilderness, and that which is ever cultivated, be kept so in the highest state; but I have digressed too far. The subjects however, are strictly connected—Hence my excuse.

I now pass to the symptoms of this disease, exactly as I witnessed them in the few cases that came under my observation. The attack came on almost imperceptibly for some days previous to any serious indisposition. During this forming stage, there was a dulness and lethargy in the deportment of the individual, sometimes interrupted by momentary spells of sprightliness and vivacity. A perfect indifference about taking of food usually existed, but often, when there was no appetite felt at setting down to a meal, a *very hearty* one was made. The bowels were usually in a more or less *torpid state*, their peristaltic motions being diminished, and the *alvine evacuations* were mostly of an *olive*, or some colour intermediate between a yellow and a green. As the disease became confirmed, a little uneasiness was felt in the head, but not an *acute pain*. This uneasiness extended down the back, and centered principally in the loins. The stomach was affected with *sickness*, or *burning*; most frequently, however, the latter existed, and always accompanied nausea, when that symptom presented. The pulse was extremely small and preternaturally slow, or quick. Sometimes it was almost entirely imperceptible at the wrist for some days, and when felt at all, seemed possessed of, (if I may use the expression), a *languid hardness*. A sensation of great oppression at the precordia, attended by an indescribable uneasiness or soreness in the whole of the abdominal viscera existed in a greater or less degree for the first 10 or 15 days of the disease. The skin was *cold*, dry, and contracted, the veins dark, and diminished in size, and the whites

of the eyes of a greenish cast; and in the advanced stage of the disease, the countenance haggard and inanimate. There was a great propensity to sleep, or a total inability to do so; considerable craving of *cold* water, whilst there was little or no heat about the mouth and fauces, which were, however, generally dry. The *tongue*, at the accession of the disease, was furred considerably in the middle, but not on the edges, and of a colour usually between a pale yellow and a white. The fur gradually became more general over the surface, and continued more or less white until from the 10th or 16th day, when, upon the recovery of the patient, it it changed more to a yellow, and slowly sloughed away, or in case of fatal termination, became dark or mahogany coloured. The blood, when a vein was opened, flowed with great difficulty, was extremely black, and upon standing a few minutes coagulated with great force into one homogeneous mass, with no separation of the serum and crassamentum, but sometimes with a small quantity of coagulable lymph, collected at some point on the surface. This lymph was of a blueish cast. The discharges from the stomach when emesis was produced, was of a *greenish yellow*, or deeply green, and sometimes *black*. The alvine evacuations were (upon the first administration of purgatives) *green* mixed with yellow, and during the balance of disease, until convalescence was established, were mostly *entirely green*, or black, or varying from one of these to the other; and they contained large quantities of coagulated lymph or mucus. If by the operation of medicines a change of colour was produced in the discharges, the former colour of green or black was reestablished, if the operation was permitted to cease 4 or 6 hours. This I found to be the case in some instances for 10 or 15 days, when the bowels were daily evacuated freely. In the worst cases I saw, the discharges were altogether black for several days. In one case, there were six or eight copious discharges produced in an hour and a half after I had bled my patient, on the 11th day of the disease, and all of them thin, and as black as ink. This patient gradually convalesced from that period.

The sensibility of the surface was almost entirely *suspended* during the violence of the disease, and blisters were scarcely felt at all. In every case blisters were used, and the patient uniformly felt quite indifferent about them until the disease began to subside. Then

the surface which had been acted upon by the flies, and nearly dried up in a few hours, would become inflamed, and in one or two cases were very sore and painful. *These* phenomena I confidently attributed to the great congestion or accumulation of blood, in the viscera, and its consequent desertion of the capillary vessels of the surface. The green discharges from the bowels, I have attributed to the imperfect secretion going on in the liver, which was so oppressed by the accumulation of blood in its debilitated vessels, as to be disqualified for the formation of bile of a natural quality; and I conceive it highly probable, that there might be an actual effusion of blood from the extremities of the vena portarum into the biliary vessels, which assisted in producing the preternatural colour of the discharges. I am further of opinion, that in violent cases there was a considerable effusion of blood from the capillary vessels on the inner surface of the intestines themselves. I can *rationally* account for these phenomena in no other way, than by supposing them to take place in consequence of an actual rupture of the *capillary vessels*, from the mouths of which the blood slowly oozes. In fact, I conceive there exists a manifest *passive hæmorrhage*.

In all the cases of *congestion* that I saw, the abdominal viscera were its seat, with one exception. In this case, the morbid accumulation took place in the brain. I did not see this patient until the fifth day of his disease, when I found his sensorium greatly affected, whilst the abdominal viscera, though very much diseased, seemed to be but slightly affected with congestion, when compared with other cases. His evacuations were never so black, and the surface of his body much warmer. His pulse also was more full and active than in any case I met with.

From the time I saw this patient, the symptoms of cerebral congestion rapidly increased. Whilst his body was preternaturally warm, the external surface of the head was cold and contracted. He became perfectly delirious, his pupils were so dilated that the iris was fully half obliterated, yet he seemed not to suffer the pain of ordinary acute phrenitis; the symptoms assuming a character, intermediate between those of *that disease*, and of apoplexy. Notwithstanding venesection to the amount of about *sixty ounces*, arteriotemy in the temple, *copious purging*, *cupping*, and blistering at

the back of the neck, on the body and extremities, and over the whole scalp, were strictly and regularly executed, this patient continued to grow worse for about five days after I saw him, when he expired. That in this case there was great congestion of blood in the brain, I am induced to believe, from the symptoms of its oppression, whilst some of the characteristic symptoms of active inflammation were absent. There *was*, a little previous to death, a discharge of blood of a dark grumous character, from the nostrils, and I would venture to say, that could I have had the opportunity of examining *post mortem*, I should have found great accumulation of fluids within the cranium, with considerable disorganization and extravasations.

In the father of the subject of the above case, I saw a complete case of congestion in the *abdominal viscera*. He, from the very commencement, complained of nothing but a burning sensation at the stomach, with great oppression and uneasiness throughout the abdomen. I saw him first on the fourth day, and he expired on the nineteenth; when he seemed to have been completely exhausted, by the slow effusion of blood from the intestines and inanition, from the loss of power in the digestive and assimilating organs. These were the only two cases (that I had the management of) that proved fatal. Whilst amongst those that recovered, there were two, exactly similar to the last of the two stated, and equally severe.

The practice I pursued, was always to premise *venesection* and to carry it to a great extent, unless the *congestion* was so great as to do away the ability to *react* in the system. Even in cases where the pulse was *nearly* or quite imperceptible at the wrist, I uniformly opened a vein and suffered the blood to flow until the pulse *rose*, or some *distress* was occasioned in the parts affected with congestion. If the first circumstance occurred upon the loss of blood, I continued its detraction, until it flowed more freely and became of a florid red, or at least much brighter than at the commencement of the process. In some cases I took at once as much as 32 oz. When the distress was great upon the loss of blood, the pulse was rendered more feeble, and I then suspended the operation for some time, when the experiment was *repeated*, to see if *reaction* could be induced. If it could not be roused, I decided that the local accu-

mulation of the fluids was so great, that the quantity distributed in the general circulating system was too small to allow of present detraction. Under these circumstances V. S. added to the inequality in the distribution of the blood, and done mischief by weakening the heart and blood-vessels, whilst it could have no effect from the want of *reaction*, in removing *local congestion*, which was the source of mischief. Here I found it necessary to depend upon topical depletion, by evacuant medicines, blisters, &c. By these means the local congestion was gradually relieved, the powers of the heart and blood-vessels comparatively increased, and the circulation equalized and made free. Venesection, when used in the forming stage of the disease, I believe would always lessen *greatly* the severity of the attack, if it did not put a complete check to it. In two instances where I had to lay aside the lancet about the 3rd day, for the want of reactive powers, I resorted to it again between the 8th and 12th days. In these cases the symptoms had been extremely violent, and the blood drawn in the first stage exhibited no symptoms of active inflammation ; yet, on the last application of the lancet, the pulse rose, and the blood itself presented a highly buffy surface. These two cases gradually convalesced from the time of last using the lancet. In this practice I was regulated by the effects of other remedies. When I found they had sufficiently diminished the local congestion, to afford the heart and blood-vessels a greater *comparative* power to *react*, and brought the viscera into a state capable of being reacted upon, I applied the lancet, and thus hastened the removal of the impediments to a free circulation, and regular distribution of the fluids.

I depended principally upon *purgatives*, but usually combined a sufficiency of *tartarised antimony* or *ipecacuanna*, to produce nausea. I generally administered the sub-muriate of mercury, in doses of from 12 to 20 grs. with the above combination, at night, and the next day, in repeated doses, the *sulphas magnesiæ*, the *sulphas sodæ* or the *oleum ricini*. The first and last of these articles I found the most agreeable to the stomach, but when the sulphas sodæ could be retained, it was equally, if not more, effectual than either. Jallap and rheubarb, I used not more than once or twice. The former seemed, particularly, to distress the bowels very much, without being more effectual in operating than the mild articles. The better

I succeeded in obtaining the full effect of cathartics, the more I relieved my patients, and in some, I found it necessary to induce what in ordinary cases might be called *hyper cartharsis*, and to keep it up for several days. When these steps were taken, I always found that the patient was weakened *less*, than when the disease was permitted to advance without the profuse use of medicines. I did not employ emetics often, because I seldom had the opportunity of using them in the forming stage of the disease, to which I conceive them to be applicable. In the *country*, physicians seldom see a patient before his disease has become confirmed. After the congestion of blood was completely established upon the viscera, I found an emetic to produce violent distress to the patient, without procuring any effectual evacuations. The inefficiency of emetics, under these circumstances, I attributed to the accumulation of blood being so great in the viscera, particularly the liver, as to prevent the usual effects of emesis in creating great relaxation and flow of fluids from that organ.

When I had the opportunity of prescribing in the forming stage of the complaint, I found the sulphas sodæ and tart. antimony, in a dose sufficient to produce a powerful effect both on the stomach and intestines, to be the most effectual that could possibly be used. I am confident that I nipped (in the bud as it were) an attack that would have presented a dreadful case, by V. S. to 32 oz. and using the above dose. No other remedies were used, but rest and abstinence, and the symptoms gradually subsided. It was with great difficulty that the mouth ever became affected by calomel, and I believe that this article was of little or no service except as a purgative.

I made but a slight trial of diaphoretics. I did not conceive them applicable in the worst stages of the fever, and what trial I made of them proved to me, that they were too uncertain in their effects to be depended on. I am of opinion, however, that the warm bath would have been of the greatest utility; but in consequence of the difficulties in its application, I did not resort to it, except in the form of pediluvium which was frequently directed.

As to stimulants and tonics, I did not use them in but one case, with the exception of the bark, until my patients were convalescent, and even then I found them to create a greater tendency to relapse.

The bark I generally prescribed after convalescence was established. There were cases however I ought to remark, in which I found the use of opium necessary. When the congestion was so great as to cause great uneasiness in the viscera, I had occasionally to resort to the use of this drug, to afford temporary relief, when nothing else would. It had the effect of facilitating the circulation through the congested vessels, and thereby relieving pain; but as its effect was transitory and evanescent, I was always careful to prescribe cathartics as soon after its administration as circumstances would allow. The case alluded to above, in which I employed stimulants freely, was the one which I have mentioned before as having terminated fatally on the 19th day. I resorted to their use on the 12th day, in consequence of the rapid loss of strength in the patient, his age, and of his having been so copiously purged without relief. I used with this patient, bark, Port and Madeira wine, wine-whey and the camphorated julap, all with temporary advantage, but to no effectual purpose.

I found it necessary to continue the use of mild carthartics for several days after convalescence was established; and in fact to employ them almost in conjunction with food. I always advised an early use of thin and bland nourishment, in order to bring the stomach and intestines to the resumption of their duty as soon as they were capable.

In one case, after the congestive symptoms gave way, very strange hallucinations of feeling were experienced, such as a belief that the fingers were doubly as large as natural, with peculiar sensations of stiffness or itching in different parts of the body, but more particularly about the eyes, which were inflamed and sore. In most of the cases something of this sort was complained of during the early stage of convalescence, which was very liable to be interrupted by relapses.

Art. VII. *Some Observations on the Yellow Fever, as it prevailed in Wilmington, North Carolina, in the Autumn of* 1821. By John Hill, M. D.

Wilmington, as regards health, is as unfortunate in its locality as any town with which I am acquainted. The general aspect of the country, throughout the lower part our state, is low, flat, and barrren; and the margins of our rivers consist of swamps, subject to inundation from every tide. Our town is placed on the east side of the Cape Fear river, about thirty miles from its mouth, upon a sterile sand-hill; such a soil as is designated by Dr. Lind as being peculiarly destructive of health. On the opposite bank of the river is an island containing many thousand acres of this swamp, extending far above and below the town. Parts of this have been appropriated to the cultivation of rice, and from north east to south-east we are surrounded by rice fields. In order to the cultivation of the grain, these fields are kept constantly under water during our sickly seasons; and being acted on by the intense rays of our sun for several months, you may well conceive that no small quantity of miasma will be evolved. The parts of the town adjacent to the river are but a few feet elevated above its surface. The wharves are made ground, badly constructed, and are always overflowed by storms and frequently by high tides. In the vicinity of the square most and earliest ravaged by the disease, there is one of these wharves in an unfinished state, partly filled up with decaying vegetable matter, which, enclosed within logs and successively acted upon by the tides, exhibits a most loathsome and putrefactive source of disease. Our docks are notoriously filthy, and our cellars are so low and damp, as in wet seasons to require daily bailing. But as the commercial part of our business is conducted mostly by strangers, who desert us during the sickly season, many of these cellars, with the adjoining stores, are locked up for the season, and in them potatoes and other vegetable substances, to decay and evolve their deadly poison. Either of these causes might well explain the existence of fever in its most aggravated form. Yet such has been our situation for years; and the greater malignity of our disease this season depends upon some peculiar chemical action or constitution

of the atmosphere, or other causes beyond my scrutiny. It is true that in the commencement of the season our crops were ruined by the excessive rains, succeeded by as long a drought; and this, doubtless, with a thermometer ranging from 85° to 94°, had considerable agency in the production of our fever. But admitting that its causes were inexplicable, is its obscurity a sufficient apology for a resort to importation? Shall we rend the veil we may not lift, or cut at once the gordian knot? It is a summary, but not a satisfactory process. Yet it has been thought that the fever was imported here from the Havanna by the brig John Loudon, which arrived on the 25th of July. But in contravention to this opinion, (if other testimony be required than that of one of our most respected physicians, who asserts that he attended two cases of the fever some weeks before the arrival of this vessel,) I will briefly give the history of the brig, as depending on the testimony of the captain and mate, and also of the log-book.—She arrived here, after a passage of twelve days, with a cargo of sugar and molasses, was boarded by the health-officer, and her mate found labouring under slight febrile symptoms: but nothing appearing to warrant the enforcement of quarantine, she was permitted to unload. The next day I was called in attendance upon this man, and found him sick of jaundice, to which he said he had been subject, with its deep golden colour of the skin, clayey stools, and absence of those peculiarly distressing symptoms which characterize yellow fever. He recovered, and though confined in a house containing fifteen or twenty boarders, and in the same room with several of them, not one received his disease. This was the only case of sickness on board the vessel at her arrival, or during her stay here; and on her passage no disease, no accident occurred, except to one man, who in a paroxism of mental derangement, preceded by no indisposition, leaped overboard and was drowned. The bedding and wearing-apparel of the captain were taken to his house, in one of the most thickly settled sections of the town, and no disease has existed in his family, though his child and servants were on board day after day. Still it has been thought that the whole of the first cases might be traced immediately to the vessel, and that the secondary were but so many radii shooting from this focus of contagion. But what are its evidences? I attended one of the first victims of the disease,

and he assured me solemnly, on the day previous to his death, that he had never been on board the vessel; and I was aware that the employment in which he had been engaged, was sufficient to account for the most aggravated form of disease. He had been sounding along our wharves to the bottom of the river, searching for barrels of naval stores, and other articles of value, which in the course of time had been lost and sunk there. Exposed thus to the intense rays of the sun day after day, constantly wet, and inhaling the effluvia stirred up and exhaled from the bottom of the river, we cannot be surprised at the violence of his disease. He died of black vomit, but no one of his attendants sickened.

Nor has it appeared that those most concerned in, and most frequently about the vessel have been attacked. The crew, the captain and his family have been adduced. But the owner himself, (it is true his son has been sick, but it remains to be proved that he derived it from the vessel,) and many of our most respectable citizens who partook of a collation on board, and were seated for hours in the cabin in unsuspecting security, have passed the fiery ordeal unharmed. Has contagion respect to persons, or by what incantation did they elude a poison capable of such subtle, fatal influence? The truth is, they resided in more elevated and salubrious parts of our town, and were not so constantly exposed to miasmata and those other causes that produce, and for this season have increased, the malignancy of our disorders.

On the next feature of the disease, its contagiousness, our physicans have differed most widely. My own opinion most decidedly is against it, and it is derived solely from the experience of the last season. Previously, I had never seen what I believed to be yellow fever, and my opinion was predicated upon that of others. But when I saw myself and others day after day entering the loathsome habitations of disease and death, when the full expiration was breathed into my face, and the noisome vapour of the sick man's chamber respired without injury, the visionary hypothesis fled, and the duties of my profession were pursued without apprehension. I could not observe, without conviction too, that my patients who sickened in the infected parts of the town, the scene of their daily avocations, when removed to healthier districts did not dissiminate the disease. In several cases, however, five or six weeks after-

wards, other members of the same family have sickened, but not referable surely to contagion dormant for so long a period. Rather, in conformity with the well known cases of epidemic diseases, the pestilential cause had spread itself more diffusely, and vitiated,and poisoned our whole atmosphere.

The fever did not spread extensively, or excite alarm, until about the — of August, when two cases occurred upon the same day. One of these I attended, and although from the commencement it was marked by symptoms the most threatening and malignant, yet as such instances occur almost every season, I neither suspected nor observed any thing peculiar in its character, until the third evening, when I was alarmed by the yellow suffusion of the eyes and neck, intolerable irritability of the stomach, ejecting a dark grainy coffee grounds fluid, great pain and confusion of the sensorium, oppression about the præcordia and singultus, with a languid sinking circulation. These symptoms continued until the ensuing morning, when he expired.

It did not appear to have any respect to age, sex or colour; and its attack was generally preceded by listlessness and lassitude, weakness or pains about the knees, sometimes by excessive preternatural perspiration with a creeping chilly sensation or motion; pains of the head, shoulders, neck and loins, affecting indeed the whole spinal chord; often by nausea and a disagreeable taste in the mouth.

These premonitory symptoms continued a few days, and if not removed eventuated in a fever, attended by all the above train of symptoms in an aggravated degree. In some instances, it was ushered in by an ague, but generally by mere chilliness. The pains of the head and back now become acute. The patient is excited, restless and anxious, and complains of a fullness and burning of the eyes, which are inflamed red and watery. The countenance is flushed, wild and apprehensive, the skin dry and hot, and the stomach loathing and rejecting every thing. The state of the pulse is so various, and differs so materially in different subjects, owing I presume to the modes of attack, as well as peculiarity of habit, that I am at a loss in giving its diagnostic character. Always, however, when the external heat was great, and no indications of particular congestion existed, I have found it full, frequent and

chorded. But in a few instances, when the attack was more sudden and violent, the vital principle seemed so furiously assailed, as to sink at once under the morbid influence, probably by the ingorgement of some essential viscus. In such instances, the extremities lost their natural temperature, and became covered with a cold clammy moisture, always indicating extreme imminent danger.

The appearance of the tongue was as various as the circulation, frequently loaded with a brown bilious fur from the commencement, sometimes clean and moist, at others, dry and shining. These symptoms usually continued for a day or too, when a typhoid state of the system and a new train of symptoms supervened. The gastric irritability increased to a most distressing degree, so that the stomach was, as justly as emphatically, called by Doctor Warren, "the seat and throne of the disease." The eyes and neck now assumed their yellow copperish livery, which quickly spread itself over the whole body. The tongue and teeth became encrusted with a dark, dirty sordes, and the breath, as well as whole body, emitted a most offensive effluvia. The bowels were usually torpid, and the urinary discharges thick, red and turbid. Hæmorrhages seldom occurred in my practice towards the conclusion of the disease, nor did I observe an instance of what might properly be termed petechiæ. The period of suffering, was usually terminated, either in health by perspiration, with an abatement of all the incidental distresses, or in death, by an unrestrainable vomiting, accompanied with dark and fœtid passages, coma or delirium, and hiccough.

I have now furnished a history of the symptoms I have deemed most diagnostic, and I would ask, where are the great distinctive lines that render it a disease, sui generis, peculiar in itself, dissimilar, and distinct from our autumnal bilious remittents? That it did remit, and had in some cases regular periods of exacerbations, most of our physicians can attest. That in our bilious remittent, the gastric irritability is the primary, most important and distressing symptom, and that in a few instances, every season, it terminates in black vomit, or something very analogous to it, is equally evident. No one will certainly pretend to make the yellowness of the skin its diagnostic; for this may exist in both, but is by no means essential to the existence of either. From such considerations, I cannot refrain expressing my belief, that they are the same disease, dif-

fering only in degree, and augmented in malignity by an increased power of the morbid cause, or some peculiar combination of causes by us inexplicable. And it affords me much satisfaction to know, that I am supported by the able and experienced testimony of a Bancroft, a Jackson, and a Pinckard.

The usual mode of treatment adopted by me, and I believe most commonly by others, was the use of purgatives in the first stage, to dislodge any offending cause existing in the bowels, and to palliate or relieve the feverish excitement. To this end, I adopted the plan recommended by Doctor Johnson, of giving instantly, hydrarg. submur. xx grs. with opium, gr. ss. and I think with most decided benefit. It sometimes removed, and seldom failed to mitigate the excruciating pains of the head and back, as well as the excitability of the stomach. But as I found the operation of the calomel retarded by its union with opium, I seldom waited its effect, but discharged the bowels immediately by enemata. As regards the lancet, I do not think its use often demanded in our autumnal diseases, more especially during the last season, when all strangers had fled, and left us only natives or acclimated foreigners. As soon as the bowels were well evacuated (being taught the inefficiency of other remedies) our immediate object was to establish a full mercurial action on the system, by calomel, and the ointment; and ever found it "*no fraud* upon the public." In some instances, it is true, we were unable to produce its specific effect, and in a few, even when produced, it has subsided, apparently yielding to the superior force of the disease But what remedy is there, that does not occasionally disappoint us of its well known curative powers? or what other is entitled to our confidence in the treatment of this fever? Medical science has yet to make the discovery of its substitute, and until then, painful and distressing as are occasionally its consequences, calomel must still be our refuge and our hope. But its adjuvants are not to be neglected. The early application of blisters to moderate the affection of the stomach, aided by the effervescing mixture, will be found highly useful. The acetate of ammonia, with laudanum too, will be found beneficial in creating a determination to the surface, as well as in counteracting the purgative effect of the calomel. Lime-water with either milk or porter was quite inefficient; while from the

carbon I have thought essential service was derived. The form in which I administered it, was to rub ʒss. to ʒj. in an ounce of lime-water, or pure water, and repeat it every hour, and I think it worthy the future trial and consideration of the profession. In the last stage of the disease, when symptoms of putrefaction have made their appearance, wine and bark, with the vegetable and mineral acids have been our dependance.

ART. VIII. *Some Observations on "An Account of the Ziziphus Vulgaris and Ziziphus Lotus, or the Large and Little Jujubes, communicated by* W. P. C. BARTON, M. D." *&c. for the 4th No. of the Philadelphia Journal of the Medical and Physical Sciences.* By P. MACAULAY, M. D. of Baltimore.

THE case of the American Consul at Tunis was not unknown to me when we served in the same department of the army; and the best medical skill of our country having been exerted in vain for the cure of the troublesome teterous affection of one of his eyes, the case was thought irremediable when he embarked for Tunis. I derived much gratification when I learned, from the paper under notice, that he had been cured by an Arabian physician; and I must express my satisfaction at the very handsome, but as I think erroneous account, which has been given by the Professor of Botany in the University of Pennsylvania, of the means which were probably used in its accomplishment.

The Consul attributes the cure of his case to a plant, called "*le petit jubabe*," upon which our author remarks, "I have carefully searched the French botanical and medical works for the '*petit jubabe*,' but have not been able to succeed in finding any vegetable described by such name; neither do any of the travellers into Africa describe any such plant." Thus it is concluded, that "*le petit jubabe*" was no other than "*le petit jujube*," "which grows particularly abundant in the kingdom of Tunis." Impressed with the belief that the *small jujube* is the plant intended, our author proceeds to speak both of the *great* and *little jujubes*, under their bo-

tanical appellation, *ziziphus vulgaris* and *ziziphus lotus;* and we must refer our readers to his paper for the excellent botanical description which is given of these interesting shrubs. Of the medical history we shall say something in the sequel. At present it is only necessary to observe, that we were led to doubt the fact of the efficacy of either of these species of ziziphus in curing the consul's eye, from the very description of their medicinal powers as given in the paper before us.

On turning to the Matière Médicale of Alibert, I was soon convinced that the plant, employed by the Arabian physician, is the same which he introduces into his valuable work, under the title of "*petit-joubarbe,*" which, I can very readily conceive, may have been changed in the Tunisian dominions to "*petit jubabe*" The effects, however, as detailed by Alibert of this plant will answer our purpose. The following description of the plant, and its medical properties, are nearly in his own words.

La petite joubarbe, or *small house-leek*, is the *sedum acre* of Linnæus (decandria pentagynia*); of the natural order of the succulentes; it grows in sandy and arid soils, on roofs, and old walls. It is vulgarly known under the name, *de vermiculaire brûlante, de pain d'oiseau.*

The recent plant has an acrid and biting flavour analogous to pepper. When chewed it leaves a burning sensation in the throat. It is without odour.

Vauquelin, who had occasion to examine many of the joubarbes, found that all of them contained a certain proportion of the *malate of lime.* The presence of that salt has, also, been recognised by M. Desseres. In treating the juice of the different plants of the genera *sedum* by the acetite of lead, M. Vauquelin obtained a precipitate of a colouring matter, which offered different shades in the different species. That from the *sedum acre* was beautifully yellow.

If we judge, says M. Alibert, of the virtues of the *sedum acre*, by any of its sensible qualities, they are very energetic. It was for

* The following is Linnæus' description. *Sedum acre.* Leaves alternate, somewhat ovate, fleshy, gibbous, fixed to their stem by the inner side above the base; Cyme, 3 cleft, leafy. On walls, roofs, &c.—*Turton's Lin* 941.

some time employed as an emetic of the drastic kind, but is now entirely laid aside; Boerhaave considered it as dangerous. Some physicians have asserted, that they have employed it with success in scorbutic affections, by giving it in decoction, in beer. It is necessary that these experiments should be repeated. Touching its exterior application, the good effects which it produces, is allowed by common consent. Cataplasms of the joubarbe applied for some time to extensive scorbutic ulcers, although covered with proud flesh and subject to frequent hæmorrhages, have restored the healthy action of the part affected, and reduced the ulcer, after a period of time, to a complete state of cicatrization. Some prefer lotions made with a decoction of the joubarbe in beer, or in milk.

Our remedy has been used with considerable success in the carcinomatous ulcer, but not always equally so. This disease, when it becomes constitutional, we believe to be without remedy. M. Lombard, who tried many new experiments, assures us he has cured a great number of cancerous ulcers of a very bad kind, by the application of the joubarbe continued during some time. M. Alibert goes on to relate a case of cancer in which the virtues of this remedy were fully shown, although without success. He says, "When I was consulted the cancer was open, and the ulcer extended itself from above the bosom to the epigastric region, and to the lateral and posterior part of the thorax; it was covered with large tubercles, and the whole surface was spread over with a white covering. The suppuration had a most repulsive odour; the edges were as if torn in pieces; the neighbouring parts were livid, hard, wrinkled, and the surrounding veins varicose. The sufferings were so severe that nothing could be born on the wound, not even the softest dressings. I resolved, conjointly with M. Biett, to try the application of cataplasms of the joubarbe; they were supported with great difficulty during the first days; but Madame D. accustomed herself to them by degrees, and by often renewing them. The white covering of the ulcer insensibly detached itself, the suppuration became less fœtid, the hæmorrhages which had frequently taken place ceased, and the wound put on the best appearance. She continued better for nearly a month; but the force of the disease had so exhausted her from the horrible sufferings which she had experienced, that no aid could retard the sad catastrophe."

Two other cases are related which came under our author's notice, in concert with M. Biett. In each, the like good effects were experienced from the remedy on the ulcerated surfaces, but without success in preserving the lives of the patients.

In the splendid work of M. Alibert on cutaneous diseases, two cases are related of carcinomatous ulcer treated by cataplasms of the joubarbe with the most complete success. In other cases it did not succeed so well as the celebrated powder of Rousselet, so much employed by Sabbatier, and which is highly recommended by M. A. as a very excellent application.*

The distinguished Professor Beer, of Vienna, speaks highly of the use of this plant in obstinate teterous or cancerous affections of the eye and its appendages. I am indebted to my friend Doctor Frick, for the interesting notice of two cases which came under the care of Professor Beer, in the winter of 1818, in which the joubarbe was used with the greatest benefit. In one instance the disease had attacked the bony structure of the orbit, and nose; in the other, the under eye-lid was its seat. Both of these cases yielded daily under the use of the sedum acre, and the remedy was entirely successful. It was employed in infusion, topically.

In consulting the *Dictionnaire d'Histoire Naturelle* of Bomare, I find a similar description of the virtues of the joubarbe, which shews that its use in these affections is not of recent date. He remarks, " Cette plant vivace, qui est *l'illecebra* de *Lémery*, a un goût piquant, chaud et brûlant; ce qui lui a fait donner aussi le nom de *poivre des murailles*. Elle est excellente pour déterger les gencives ulcérées des scorbutiques: appliquée extérieurement elle résout les tumeurs scrofuleuses et les loupes naissantes. On l'estime très spècifique pour fair des injections dans les ulceres de la matrice, et pour fomenter les cancers ulcérés, les dartres cancereuses, le charbon, et la gangrene. Cette plante pilée est un caustique tempéré qui ronge insensiblement le virus d'un cancer, et qui avec le temps extirpe jusqu' à sa racine," &c.

* The following is the recipe for this famous powder:

R Sulphuret Hydrarg. Rub.	-	℥j
Resin. Pterocarp. Drac.	-	℥ss
Oxyd. Arsenic - - -		ʒss m.

To be applied upon the cancerous ulcer.

It is a common remedy, generally employed by the people in certain districts of France for ill-conditioned ulcers and the reduction of fungous flesh, in which it is highly beneficial.

Dr. Woodville, in his Medical Botany, gives a description nearly like the former of its medical properties. He says, " Not only ulcers simply scorbutic, but those of a scrofulous and even cancerous tendency, have been cured by the use of this plant, of which Marquet* relates several instances. He likewise found it useful as an external application in destroying fungous flesh, and in promoting a discharge in gangrenes and carbuncles."

The genus *sedum* is very extensive. Decandolle, in his Flore Français, describes more than one hundred species. The *acre*, which we have been particularly speaking of, grows extensively through the whole of the meredional, and some of the northern parts of Europe, and we presume is found under the same latitudes on the coast of Africa. It is not a native of the United States; few species of the sedum have been found as yet in our country, but may we not hope that the *acre*, from its valuable properties, will be transplanted to our shores?

For a complete description, with the synomyma, and a beautiful coloured engraving of this plant in full flower, we must refer our readers to the fourth volume of Dr. Woodville's Medical Botany, and to the Flora Londinensis of Curtis.

After what has been said on the medical virtues of " *la petite joubarbe*," we think it must be readily granted that it is identically the same plant which is mentioned by the consul as " *le petit jubabe*," so effectual in relieving his hitherto incurable disease. It is probable, from the letters which Dr. Barton has quoted, that the part may have been scarified with the dull instruments of the Arabian physician, before the remedy was applied, as it no doubt rendered the cure more speedy and certain.

We think it entirely doubtful whether either of the species of ziziphus, so industriously commented upon by Dr. Barton, are entitled to any notice for their medicinal effects. In this we are fully warranted from the observations of Alibert. He remarks, " Rien n'est plus ridicule aux yeux de la soine raison et de la vraie

* Mem. sur l 'Illecebra, &c.

thérapeutique expérimentale, que ce langage dont se servent certains auteurs, pour rendre compte des propriétés médicinales des jujubes. On ne craint pas d'avancer que ces fruits conviennent pour adoucir *l'acrimonie des humeurs*, pour leur donner plus de *consistance* lorsqu' elles sont trop *atténuées*, etc. Il suffiit de reproduire ces expressions, pour convaincre nos lecteurs de leur absurdité."

Certainly, if *Z. vulgaris* and *Z. lotus* have not more medical properties than *ziziphus volubilis*, or *supple-jack* of our southern swamps, they cannot be ranked with the articles of the Materia Medica; and we are led to conclude, that the fruit of these species of the lotus, which are esculent and delightful to the flavour, are not possessed of more remedial virtues, even in the country which brings them to perfection, than the date, the fig, or the prune.

In attracting the attention of the medical profession to valuable plants of foreign growth, whether the author of the paper noticed in the foregoing remarks, or myself, have fallen into an error as regards the cure of the very remarkable case which we have noticed, I am convinced that the pleasure which would be felt would be mutual, at giving to our native country one more remedy for the relief of human suffering.

[Note. It is proper to remark, that the above observations were written and nearly finished for the October number of the Recorder, but that their completion was prevented in time, by a serious and protracted illness of the author.]

Art. IX. *Remarks on the use of the Datura Stramonium (or Thorn Apple) in Chronic Rheumatism.* By William Zollickoffer, M. D. of Baltimore.

There is perhaps no section of country within the limits of the extensive territory of the United States, where the datura stramonium may not be seen growing in greater or less abundance. It is a native of this country; and seems to delight in a productive soil, in the neighbourhood of barns, stables, dung-hills, and other fertile spots; and is known by the common appellation of jameston weed, stink weed, &c. There are two varieties of this species of stramo-

nium occasionally found growing near each other, and flowering in August and September. The difference of these two varieties consists in the stem of one being of a purple colour, covered with light dots, having flowers light, purple, or blue, striped on the inside; the other has a stem of a pale green colour, and the flowers clear white. I conceive it unnecessary to give a botanical description of this plant, as respects its general outlines, as it appears to be well known by even the peasantry. Every part of the stramonium is strongly narcotic; and instances not unfrequently occur of children and others, who suffer under the most alarming consequences, which sometimes terminate in death, from swallowing the flowers, seed or leaves. It has been productive of much mischief in the hands of that class of men, who justly deserve the title which has been given them of empiric's. The symptoms which succeed an immoderate dose of stramonium, after it has been received into the stomach, are dilatation of the pupils, vertigo, delirium, paralysis, which soon terminates in the death of the unfortunate sufferer.

I conceive it unnecessary to notice the preparations of this plant that have been in general use for some time, but shall content myself by giving the following formulæ, in which I have been in the habit of using it in practice. These preparations are exhibited in the form of tincture and ointment.

Simple Tincture.

R. Sem. Daturæ Stram. ℥ i.
Spt. Vini Ten. ℔ ss.

Mix and macerate for seven days, and then filter.

Compound Tincture.

R. Fol. Daturæ Stram. ℥ ij.
Spt. Vini Ten. ℔ j.

These must be allowed to remain together for about five days, when it is to be passed through a filter, and added to it the following articles:

Ol. Pulegii, gts xx.
Ol. Cinnam. ℥ ss.
Tinct. Opii, ℥ i.
Spt. Vini Camph. ℥ ij

This compound tincture of stramonium will be found a most valuable stimulant, and rubefacient application in a variety of cases,

in which the spirits of camphor and other remedies of the kind are used externally with advantage.

Ointment of Stramonium.

R. Flo. Dat. Stram. ℥ i.
Axungiæ ℥ iv.
Ceræ albæ ℥ i.

Mix and make into an ointment by gently simmering them over the fire in an earthen vessel.

This plant I conceive ought to be more highly prized by American physicians, than any other indigenous vegetable with which we are at present acquainted; for as a remedy belonging to the class of narcotic medicines, it is by no means inferior in point of activity to opium, cicuta and many others, and when properly exhibited will be found a medicine in the hands of the practising physician, which will enable him to control some of the most distressing maladies to which mankind are subject. However, I shall content myself, at this time, by merely noticing its effects in chronic rheumatism, and the different modes of exhibiting it. Those who have been practising physic for any length of time, must acknowledge, that there are cases of chronic rheumatism which occur, that would appear beyond the reach of medical aid, and which would seem to defy every systematic course of practice which an acquaintance with the principles of our profession would point out for our observation. It is in these peculiar cases of attack that I would recommend the use of the simple tincture internally, morning and evening, commencing with about eight drops, which can safely be increased two or three drops occasionally, until the patient is sensible of its producing vertigo, when the medicine is to be suspended for a time, and if thought necessary may be recommended again; much benefit may likewise result from the patient employing, as an external application to the part, the compound tincture, which is to be carefully rubbed in. I have sometimes known the ointment to succeed, when the tincture seemed to have but little or no effect; and indeed would feel disposed to give the preference to the ointment, from the important circumstance of its being better calculated for removing the contraction of the muscular fibres, which not unfrequently accompany cases of chronic rheumatism of considerable standing. I would

not lose sight, at the same time, of the use of cathartic medicines; such as the sulphate of magnesia or common glauber salts; these purgatives I have employed with more decided benefit than any others. Sometimes it may be necessary merely to give some cooling purgative, and apply the ointment externally to the affected part three or four times during the course of twenty four hours for a few days, when the patient will obtain relief. I recollect having a gentleman under my care three years ago, who informed me that he had been labouring under a most distressing attack of chronic rheumatism for seven years. He observed that he had made use of every article that had been recommended to him, and that he had been under the hands of several professional gentlemen of distinction, and had been salivated twice without experiencing any benefit. I gave him about a pint of the compound tincture, and directed him how to use it; about four weeks after I heard from him, when he informed me of his being free from pain and in the full enjoyment of health. Since that period I have had a number of cases, some of which I have been only able to relieve, and in others I have been much gratified that I had it in my power to afford permanent relief.

ART. X. *Remarks on certain objects of the Materia Medica, in reply to a paper on the same subject, by* Professor COXE. By JOHN BARNES, M. D. &c. of Philadelphia—Read before the Medical Society.

IN the whole annals of Medical Literature, it would be difficult to find any production, containing within the same compass more truth and error, than an article on Materia Medica and Pharmacy, by the professor of these branches of science, in the University of Pennsylvania, and published in the first number of "The Philadelphia Journal of the Medical and Physical Sciences."

Had this paper emanated from some obscure individual; had it been announced anonymously, or were it destined to be read by those members of the profession only, who are conversant with all the diversified forms and peculiarities which morbid action presents, the remarks which I am about to offer would have been un-

necessary, in as much as the paper would have carried with it its own condemnation. But when we consider the influence which situation confers, particularly the powerful and commanding influence which a professor possesses over the opinions of students committed to his charge; and recollect how little qualified students, in generally, are to appreciate correctly doctrines, which rest exclusively on practical deductions, we must be sensible of the injurious tendency of a production which comes from a source which ought to be regarded as the highest medical authority of our country, and which at the same time abounds in erroneous practical precepts.

Viewing as we have done, the professor's paper in this imposing aspect, we have deemed it our duty, as we believe it to be the duty of every member of the medical profession, candidly and honestly to detect and point out its errors.

Had he confined his observations to the evident design of his paper; which was to point out the wretched condition of pharmacy, as it then existed; exhibiting many of our apothecaries totally unqualified for the duties they had assumed; and the necessity there was for the correction of these abuses, by the establishment of some collegiate arrangement. Had he confined himself to these views, he would have avoided those palpable inconsistencies, with which his paper so much abounds. For if we concede the principle, that very few remedial articles are required in the practice of medicine; "that no physician, however extensive his practice, does actually employ more than fifty different and distinct articles; probably not even a third part of this number;" admit this doctrine, and circumscribe accordingly, the Materia Medica; what necessity would then exist for demanding of the pharmacologist, a preparatory course of collegiate studies? The business of the pharmacologist, however, is not thus circumscribed. His duties are much more varied and complex than the professor would have us consider them. They embrace within their scope a series of classical and scientific pursuits, which give to this department of medicine an importance, that can only be properly appreciated by those who have devoted particular attention to the subject.

That we may correctly estimate the merits of the professor's views we will direct our attention for a few moments to the con-

stitution of diseases; or what we believe to be the exact character of morbid action.

The introduction of the Brunonian system, will for a long time be contemplated as an event of immense moment; and in regard to the different points of view, in which it will be considered by the partizans of different medical sects, be either hailed as a great benefit, or execrated as a fatal mischief; while the impartial umpire viewing it carefully in all it bearings, will be at loss where to rank it in the scale of human allotments. The leading principles of the Brunonian doctrines, essentially modified and enlarged, became not only the prevailing, but almost the exclusive system of medicine in this country. The eloquence, high standing, and commanding authority of its illustrious advocate, the late Professor Rush, threw into the shade all opposition, and gained for these principles, a celebrity and character, which their intrinsic merits have not enabled them to sustain.

The spirit of indiscriminate generalization, which pre-eminently marked the Brunonian system, lost sight of all those minute and exact discriminations of disease, which the patient and attentive observations and laborious investigations of our medical ancestors, enabled them to discover and describe; and which they have handed down to us as the richest legacy they could bequeath.

The paper under consideration, may be regarded as the legitimate offspring of the Brunonian system. Throughout, there is a total neglect of attention, to that peculiarity of action, which constitutes the very essence of individual disease. The writer seems to have forgotten, that almost every action of the human system is sui-generis; that every agent in nature, whether sanative or morbific, produces its own peculiar impression, and that, consequently, the complex operations of the human system, both in its healthy and diseased condition, are astonishingly controlled and diversified by the numerous agents, by which it is constantly surrounded and influenced.

Adopting the opinion, then, that there does exist individuality in diseased actions; that one morbid action essentially differs from another, and admitting also that many of these actions can only be removed by counter impressions; we cannot but deplore the situation; of that physician, who is obliged to contend with the whole

catalogue of diseases, having at his disposal, but ten, fifteen, twenty, or even fifty different remedial articles.

These remarks apply to diseases as they naturally present themselves, without regarding their combinations, variations, and like circumstances, and without taking into consideration those strong marked idiosyncracies, which compel us in many cases to have recourse to remedies essentially different from those we would employ under ordinary circumstances.

We would ask any physician who has been some years in extensive practice, especially a city practitioner, to enumerate not all the articles which in the course of his practice he may have prescribed, but such only as he deems absolutely necessary; and we have no hesitation in saying, that his list will soon exceed the extreme limits of the professor's range. We have made this enumeration for ourselves, and are perfectly satisfied that we should be crippled and impeded in our professional duties, did we not transcend those bounds beyond which, according to the doctrine of the paper we are now considering, no physician has as yet found it necessary to go.

After some general reflections on the impropriety of employing articles that are considered as possessing but little efficacy, the professor goes on to remark: "even of active remedies, is it requisite to retain so many of the same nature?"

We do not exactly know what idea is intended to be conveyed by the phrase "same nature." If we are to understand by it that different articles produce impressions precisely alike, we have already stated, fully and distinctly, that we do not believe in the existence of any such remedies; and, in this opinion, we are far from being singular. But if we are to consider it as alluding to articles of the same class, for example, one cathartic or emetic, compared with another active cathartic or emetic article, we answer, unhesitatingly, that every efficient remedy should be retained; for some peculiar form of disease may occur, or there may exist such constitutional idiosyncrasy, that this article, out of the whole class, might alone be adapted to the nature of the disease and the constitution of the patient. In addition to this, we may also observe, that it frequently becomes necessary to combine articles of the same class, and some of the best compounds we possess are formed in this manner.

In the course of this paper, the professor presents us with what we may consider a summary of his entire Materia Medica. An examination of this will therefore enable us to ascertain, with some degree of exactness, the intrinsic value of his opinions on this subject.

"Let us briefly enumerate," he observes, "some of the principal articles, and see if with these we may not rest safely contented. Among the cathartics, can we possibly be deficient if we limit the number to about a dozen, viz.—Jalap, rhubarb, senna, manna, castor oil, salts, cream of tartar, sulphur, magnesia, aloes, and, above all, calomel?" This list of cathartics contains nearly as many articles as the professor asserts, constitute the whole Materia Medica of some physicians; and yet, if we examine it, we shall find it not only indefinite in phraseology, but deficient in active and indispensable remedies. One article is simply termed *salts;* we presume the sulphat of soda or Glauber's salts is the article intended. In that case the Epsom and Rochelle salts are excluded, both indispensable to the practitioner; as there are many cases of disease in which we know of no article that could, without detriment to the patient, be substituted for the Epsom salts; and not unfrequently we meet with patients to whom the taste of both the Glauber and Epsom salts is so disgusting, that the Rochelle can alone be retained. Besides the exclusion of these salts, there is no mention made of scammony, colocynth, hellebore, buckthorn, elaterium, butternut, gamboge, and many other articles equally important.

"For emetics," says the professor, "can we *possibly* require more than the ipecacuana and tartar emetic, together with two or three others of inferior powers.

Independently of other articles we have thus excluded from this class, the sulphates of copper and zinc, and the turpeth mineral, all prompt, efficient, and in our opinion indispensable emetics.

The turpeth mineral we believe to be a remedial article, which only requires its powers to be known in order to secure for it a high rank in the Materia Medica. The promptness with which it acts, and the sudden and permanent relief which it affords in many cases of highly dangerous anginose affections, renders it in such cases as much superior to any of the common emetics, as mercurial purges are to other cathartics, when we wish not only to eva-

cuate the contents of the primæ viæ, but also to influence the action of its mucous coat.

In regard to diuretics and diaphoretics he observes, "Some of the before mentioned will be found useful,—squills and seneka, perhaps digitalis, a few of the neutral salts, and more especially aqueous dilution." Thus doubt is expressed of the efficacy of digitalis! Can any practitioner, who is accustomed to prescribe this article in a good state of preservation, and with its compounds, doubt its diuretic powers? But to doubt the efficacy of digitalis is not the most objectionable part of these remarks. What physician, in extensive practice, would not most seriously regret being deprived of antimonial powder, guiacum, copaiva, turpentine, tobacco, eupatorium, erigeron, or even parsley root?

"As a sialagogue," the professor asks, "can we expect any thing superior to mercury?" By this question we understand him as wishing to intimate, and we believe we do no injustice to his meaning, that it would be desirable to reject from this class all articles except the one named. It must be conceded, and we cheerfully unite in the sentiment, that in most cases we know no remedy that will bear any comparison as a sialagogue with the one mentioned: yet every practitioner, of extensive experience, must also admit that there are persons who cannot use this article, even in the smallest doses, without material injury, and that many cases of disease occur in which its employment would be extremely hazardous.

In chronic hepatic affections, where the patient has already taken a considerable quantity of mercury, and where the necessity still exists for continuing an impression on the glandular system, and the mercurial course can no longer be prosecuted on account of the existing and increasing debility, can any physician faithfully discharge the duties of his profession, who has banished from his Materia Medica the nitric and muriatic acids.

In rheumatism of the face, tooth-ache, and similar affections, every practitioner must have witnessed the prompt and efficacious relief which has been obtained from the local application of some stimulating vegetable sialagogue. "Our expectorants," says the professor, are chiefly of an emetic nature, and may embrace those above mentioned." Flaxseed, gum arabic, liquorice, the mucila-

ginous vegetable articles generally, with the stimulating gums and resins, are thus overlooked.

Ought not a physician justly to blush for his ignorance, whose patient, labouring under a catarrhal affection, with that debility of the stomach which precludes the employment of nauseating remedies, finds his physician to possess no other remedial resources, and has the distressing symptoms of his complaint removed by the judicious application of some simple remedy, administered by some experienced nurse? We pass by the professor's remarks on antilithics and emenagogues, and come to his observations on the tonics. "Independently of diet, we chiefly depend on bark, columbo, quassia, some of the metallic preparations, as of iron, copper, zinc and arsenic; and, among the stimulants, what can we require beyond wine or alcohol, opium and its preparations, some of the essential oils, æther, oil of amber, and a small number of inferior powers?"

In this enumeration, the professor has excluded one of the principal tonic medicines we possess. What article, we would ask, is more extensively and usefully employed, both in domestic and officinal practice, than the substance, compounds, and preparations of gentian? and where is the practitioner that would willingly relinquish so mild, pure, and elegant a tonic as the infusion of chamomile flowers?

Why the professor should have inserted arsenic, in his list of tonic medicines, we are at a loss to conceive. We have witnessed the liberal employment of this medicine by others, and not unfrequently have prescribed it ourselves; yet in no one instance have we observed its tonic effects. By its use we have reduced the force and frequency of the circulatory system; lessened the powers of digestion; arrested the action of the absorbents, and induced general muscular debility. Hence we have found the arsenic most efficacious, and best adapted to the intermittents of higher action, in which the apyrexia was not complete, and where the bark and its compounds could not with propriety have been administered. In very many diseases, we think the Dr. would feel at a loss, without the use of volatile alkali, ginger, mustard, horse radish, capsicum or red pepper, black pepper, and a long list of similar articles not less indispensable; and yet we find the whole of them excluded.—We believe it would be pertinent to our subject to relate an

interesting anecdote, of which we retain a lively recollection, mentioned by the late Professor WISTAR in his lectures. A medical student having taken a large quantity of opium, or laudanum, had spasms of the stomach, induced by the injudicious administration of remedies for his relief; his fellow students in attendance were at a loss how to act; unwilling again to give him opium or its preparations, they deemed it advisable to call in consultation their venerable preceptor the celebrated Cullen. He accordingly came;—prescribed a dose of musk, and in a short time the sufferings of the student were entirely relieved. Were that illustrious Professor to revisit our world, and chance to meet with the paper now under consideration, would he not be astonished to find, that a professor of Materia Medica in the principal medical school in the western hemisphere, did not deem the musk an essential remedial aruele?

The professor remarks, "that our external applications are derived from cantharides, one or two caustics, and a few more, together with some articles for the formation of oitments; and if with all these, scarcely exceeding half a hundred, we cannot accomplish our intentions, it is much to be feared success would not follow from a greater augmentation.—How few indeed," continues he "of those I have enumerated are there, which are actually employed in the practice of any individual physician! his real pharmacopœia is circumscribed within much smaller limits."

We do not wish to extend our observations, although there is ample grounds for further animadversion. It is sufficient for us to have shown the inaccuracy of the professor's views in circumscribing within such narrow limits the Materia Medica. From what has been said it must appear sufficiently obvious, that many important and indispensable articles have been excluded; that, in addition to those already noticed, we might with perfect propriety have added the preparations of lead and bismuth, *camphor*, cicuta, *sarsaparilla*, mezerion, ergot, the gases, and many other articles equally efficacious, and most of them absolutely essential for a faithful performance of our professional duties.

It only remains for us to add, that we have endeavoured frankly and honestly to express our views. The sentiments we have advanced we conscientiously believe to be correct; and, in the expression of them, we trust that we have in no instance deviated

from that urbanity and decorum which the most rigid rules of politeness would exact, and which should ever mark the criticisms of science.

ART. XI. *A case of Anastomosing Aneurism of the internal Maxillary artery, successfully treated by tying the common carotid artery.* By GRANVILLE SHARP PATTISON, ESQ. Professor of Anatomy in the University of Maryland.

BEFORE the improved operation for popliteal aneurisms, which the genius of the immortal Hunter suggested, these affections were rarely cured without the loss of the limb; and even after this great discovery as to the method of cure, all aneurisms not situated on the extremities were considered incurable, and the unfortunate patients were left to the most miserable of fates, expecting that every next contraction of the heart would be the one which would terminate their earthly career, and in the "twinkling of an eye" sever them from all their dearest and most cherished connections. To none of her departments has MODERN SURGERY led a more rapid and triumphant march than in this one. The iliac arteries, the subclavian, the innominata, the carotid, and even the abdominal aorta have been tied, and now very few cases of aneurisms occur, which the intelligent surgeon does not attempt to remedy.

In the common varieties of aneurism the plan of treatment has been settled by an extended experience, which no after observation can ever alter. We tie the great artery on which the disease is seated, and by thus throwing the circulation into a new channel the portion of the blood-vessel which is diseased becomes obliterated. In the anastomosing aneurism, however, the efficacy of the mode of treatment, which had in the others been found so successful, has been denied; and it has been asserted by a late eminent surgeon, that these cases are only to be cured by extirpating the tumour of vessels. I am aware of the facts which Mr. Bell has adduced in support of this opinion, and am willing to admit, that

securing the small vessels in the neighbourhood of the disease will never prove successful. Every vessel which enters into the structure of the aneurismal tumours, has the peculiar morbid disposition which has previously produced the disease, and so long as any of these continue to receive blood through the direct circulation the affection will continue to extend.

The experience, however, of Messrs. Travers and Dalrymple has satisfactorily proved that the general assertion of Mr. Bell, as to the necessity of extirpating the anastomosing aneurismal tumour is incorrect, and has shown that the ligature of the great trunk of the vessel on which the disease is seated, will be followed by an equally happy result with the one which attends the tying of the artery in the common aneurism. As our experience is limited on this subject, and as it is one which it is of vast consequence to establish, seeing that anastomosing aneurisms frequently occur in situations where it would be impossible to extirpate them, I have felt it my duty to present the following very interesting case to the consideration of my brethren.

Mr. C. C. aged 18 years, consulted me the 6th of April, 1821, on account of a great tumefaction of the left side of the face. As the history of the origin and progress of the disease is very ably detailed in two letters, which I have received from my patient since his return home, I shall introduce them, as containing a more distinct account of the complaint than any I could furnish.

DEAR SIR, George Town, May 30th, 1821.

Agreeably to my promise, I now send you a detailed account of the disease in my face, from its commencement down to the period of the late operation. My own recollections have been assisted by my nurse, who has been in the family during the whole course of the disease, and whose situation, whilst I remained at home, afforded her a better opportunity than others of observing the circumstances attending it.

To the best of my recollection, the disease first appeared in the cheek early in the summer of 1813, I being then ten years of age; about the end of the season, it began to make its appearance about the temple, when it first excited the alarm of my friends. After this time, I paid several visits to Philadelphia, for the purpose of consulting the professional gentlemen of that city, and I recollect these were for some time in doubt before they determined the disease to be a polypus. At one time they decided that it was not, and perhaps their final determination was influenced by this circumstance,

I told them, and with much confidence too, that I believed the disease to have originated in the nostril. As the disease at first gave me no uneasiness, and occupied little of my thoughts, I might readily have been mistaken in this circumstance, and my own subsequent reflection, as well as the opinion of my nurse, induces me to believe that I did err.

The period of the first operation I do not remember, but its duration was about three-fourths of an hour; and, though I was able to walk about the same evening, I considered it more disagreeable than the second. The next operation was in the spring of 1815, and was much more extensive; but as I believe you are acquainted with its nature, I will not enter into a detail of it.* I would, however, mention that, after a considerable time, I fainted from loss of blood, which forced them to stop the operation. The doctors hoped that they had rid me of the disease, and for some time there was a diminution of the cheek and an absence of the disease in the nose. These favourable appearances were of short duration; the disease reappeared, and gradually increased, without the application of any remedy, until the commencement of the last fall. I was induced a short time previously, to consult a person who had the reputation of being successful, in treating several novel cases; and as his remedies appeared simple, and he appeared confident, I determined to follow his advice. Having been foolish enough to submit to his directions, the hope of relief induced me to continue that submission when his treatment became more severe; and thus I subjected myself to much trouble, pain, and expense, without reaping any good fruits.

I do not remember any violent bleedings previously to the first operation; and though I recollect having experienced them between this and the second, yet, from the lapse of time, I have a very indistinct idea of the circumstances attending. It was after the second operation that they were most frequent and most violent. In the summer of 1817, they became so frequent as to alarm my friends. If I overheated myself, or suffered a slight blow on the nose, or was jarred, my nose would bleed violently; sometimes it would bleed spontaneously. In two days, (in three bleedings) it bled so very copiously, from my having blown my nose, that I was confined, from its effects, for some days after. The blood I would

* Both of the operations to which Mr C refers, were performed under the erroneous impression that the disease was a polypus. The first was executed with ligature, and forceps introduced through the nostril. The surgeon at this time entertaining the belief that the disease was confined to the nostril. The cheek however, begining to swell shortly afterwards, it was supposed that the polypus had originated from the antrum, and an operation was performed with the view of extripating it. The operation consisted in removing with the trephine, the anterior wall of the antrum, and thus having exposed the tumour, an attempt was made to cut it out. The bleeding was however, such as soon to put a stop to the operation. The quantity of blood lost during it was very great, and the patient was so enfeebled as to be obliged to remain in bed for some weeks afterwards.

lose at each of these bleedings, would frequently measure a pint, and sometimes would exceed this quantity: it would stream out most violently, and all exertions to stop it appeared to have no good effect. In the summer of 1818 I was at college, and the bleedings were there more violent than ever. Having no person with whom I could consult, I felt much alarm at my situation, and it must have been very dangerous. Very frequently, whilst I would be sitting quietly in my room, (I there was careful to use as little motion as possible,) the blood would gush forth in torrents, I having no previous notice that it was coming. Especially during the warmest part of the season, I was obliged to restrict myself very much in exercise; a slight exertion, a very short walk in the heat of the day, was generally followed by a violent bleeding. At one time, I was obliged to debar myself entirely of exercise; a walk of twenty yards in the sun has produced a violent bleeding. Sometimes I had warning of a violent bleeding by a slighter spontaneous one, and in this case, I generally took a dose of salts, which had the effect of retarding it. Sometimes, though not so violently, the blood would descend through the orifice to the mouth, as if unable to obtain a vent in the usual way. I have remarked this circumstance in the bleedings, that they were most violent and frequent in the warmest weather; in the winter, I seldom bled beyond what many persons in health are subject to. Since 1818, I do not remember any violent bleedings until the last winter If there have been any, they were very rare. During the last winter I had two or three that were pretty copious, but they were all caused by following the prescriptions of the German doctor.

Having delayed writing for some time, I now address you in such haste as, perhaps, to omit some points on which you wish information. Should this be the case, I will gladly give you any further information in my power.

With much respect,
I remain, dear sir,
Your most obedient servant.
C. C.

George Town, June 4th, 1821.

Dear Sir,

In the haste of my former communication, I omitted some particulars which it may be agreeable to you to hear.

The left cheek, at its usual temperature, was always warmer than the other, and was much more easily affected by exposure. So delicate was it, that when obliged to expose myself to the summer's sun, if the rays fell in that direction, I was obliged to cover the affected cheek; and I have frequently suffered inconvenience from lying on it.

There was also in this cheek a very peculiar feeling, which extended itself over the left half of the upper lip, and as far in the gums of the upper jaw. I am at a loss to describe this peculiarity;

but it has now entirely disappeared, and, to the feeling, the parts are as well as those corresponding on the opposite side of the face.

The fine air of our town has worked a miracle in my favour; my strength is returning very fast, and both neck and cheek are doing very well.

With the highest respect,
I am, your obedient servant.
C. C.

The tumour of the cheek was at the time I saw Mr. C. very large, its central point occupied the situation of the antrum higmorianum; but the walls of this cavity having been destroyed, it passed from thence in every direction upwards, into the orbit, protruding the eye nasally, it passed into the nostril of the left side, which it completely filled, and pressing on the septum-narium, it gave a general character of distortion to the nose. This tumour was, however, most prominent in a direction outwards. The second operation having removed the anterior wall of the antrum in this direction, there was nothing opposed to its passage, except the small fascial muscles; and their forces, although they might have a tendency to prevent its direct growth outwards, could have little effect in restraining it from growing in a direction outwards and backwards. The symmetry of the left side of the countenance was completely destroyed. The tumour, which in size was nearly equal to the head of a new born child, extended from the left margin of the nose, to the line which marked on the neck the tracheal margin of the sterno cleido mastoideus muscle. When the disease was examined as it appeared in the nostril, the first impression produced was that of a polypus in the antrum. This impression could not, however, after an attentive examination be entertained; there is in all polypi, an expression, if I may use the term, altogether peculiar; their vitality is but of a low grade, and their imperfect organization is so marked, as to enable us to distinguish them from all other affections. Had it however, been otherwise, and had we from the examination of the tumour as it appeared in the nostril, been led to adopt an erroneous opinion as to its true nature, it must have been corrected by pressing the tumour betwixt the fingers, one having been introduced into the mouth, and another placed on its external surface; as thus examined, the distinguishing character of anastomosing aneurism was at once de-

tected, that peculiar pulsatory throbbing which characterizes them from all other affections, being distinctly felt. The opinion I delivered to my very intelligent friend Mr. Hayden was, that his disease was an anastomosing aneurism, situated in the terminating branches of the internal maxillary artery; that the disease having begun behind the *tuber maxillare* had first entered the nostril, inducing the belief that polypus had formed there; that from thence it had, by destroying the posterior wall of the antrum higmorianum passed into and occupied that cavity ; that enlarging, it had protruded and rendered prominent the external wall of the antrum, which was by the surgeon removed, under the impression that the polypus had entered the cave of the cheek, and with the view of extirpating it.

Mr. Hayden, on receiving this statement, assured me that from the examination which he had made when consulted by Mr. C. at Washington City, he had felt inclined to believe that the disease was aneurismal in its nature ; but as this opinion was opposed to the one given by the eminent surgeons who had performed the two operations upon it, he had begged Mr. C. C. to visit Baltimore and consult me; and anxious that his patient might hear my opinion unbiassed by any observations of his, he had determined not to state his suspicions until I had delivered to Mr. C. my opinion.

Had I from an examination found any difficulty in deciding on the nature of the disease, recalling to recollection the facts of its history I could not have hesitated. Its progress, the suspicious temperature of the tumour, but above all, its frequent and tremendous hemorrhage, were symptoms which could not have been found attendant on any other affection. As to the proper plan of treatment, there could be with bold and intelligent surgeons but one opinion. Mr. C. held his life on a most uncertain tenure, every hour he was in eminent jeopardy of losing it, and every evening, as he closed his eyes in sleep, a bleeding occuring during his slumbers, might have placed the cold seal of death upon his eyes, and prevented them from ever again beholding the light of the morning.

To prove that his state was as dangerous a one as we have represented, it is only necessary to state that about two months before Mr. C. came to Baltimore the blood gushed in such a torrent from

his nostril, as to render him insensible before he could reach the bell, and he was only accidentally discovered sometime afterwards, in a state of syncope, by a member of his family who happened to enter his chamber. The operation of extirpating the tumour of vessels was out of the question. Could we even have flattered ourselves that our patient could have survived the great effusion of blood which must have followed cutting into it; it was impossible to expect that a substance so soft and pliable, would not have passed into some of the small osseous recesses situated in the facial bones, and would then have eluded our search, and formed a root from which the disease would speedily be reproduced. The only operation by which we could hope to benefit Mr. C. was that of tying the great carotid artery, and thus throwing the circulation of the facial arteries of that side into new channels, and by this means taking off its pressure from those branches which constituted the disease. Reasoning upon general principles, we were entitled to hope this result. And bringing to mind the success which had followed the ligature of the carotid, in the cases of anastomosing aneurism recorded by Messrs. Travers and Dalyrmple, the justness of our hopes were confirmed. There was, however, more to be apprehended in the case of Mr. C. than in the ones alluded to. From its situation, and from its long continuation and great size, very considerable disease in the parts surrounding it was to be apprehended. The ligature of the artery would destroy the aneurismal character of the tumour; but its irritation had produced so much thickening and disease in the surrounding parts, that it was not improbable that they, receiving a sufficiency of blood for their support, might continue to increase, and finally, by ulceration and the assumption of a specific morbid action, terminate in the death of our patient. As Mr. C. possesses a mind of a very superior order, we did not hesitate to make him fully acquainted with every particular of his case. We pressed the propriety of this operation, in despite of the objections which might be urged against it. And he, with the most manly fortitude, consented to its performance.

The operation was executed by making an incision, about two inches in length, through the skin, platysma myoides, and fascia. The cervical sheath was then opened, and the artery separated from its connexions with the nervus vagus and jugular vein, was

tied with two ligatures and divided betwixt them. Several writers who have described the operation of tying the carotid artery, have stated that the alternate filling and emptying of the vein has produced very considerable embarassment to the operator. I, however, neither in Mr. C.'s case, nor in another in which I have since performed the same operation, found any difficulty opposed to their execution from the vein. It is true, that at one moment it was a little more turgid with blood than the next, but the distention was never such as to conceal the artery, or to be in any danger of being wounded by dissecting boldly down to the cervical sheath. Immediately after the artery was tied, the appearance of the tumour, as it presented itself in the nostril, became remarkably changed; just before, it seemed distended, even to bursting; but, so soon as the direct circulation was removed, its distension was destroyed, and it became shrivelled on its surface. The pulsatory movement, which could, previous to the operation, be easily discovered in the body of the tumour, could not, after it was executed, be detected. As nothing remarkable occurred during the progress of the cure, it is quite unnecessary to give a detailed account of it. It is sufficient, in regard to the treatment, to observe, that with the view of taking from the force of the circulation, and of preventing the spreading of the inflammation from the wound to the neighbouring parts, free depletion by the lancet and purgatives was adopted. And in respect to the appearance of the tumour, it is only necessary to state, that there was a daily improvement in the expression of the countenance. The absorbents fulfilled their duties with much more energy than could have been expected; the tumefaction hourly disappeared; the malar bone, and zygoma which were completely buried in the tumour, as it was absorbed became evident, and the whole character of the countenance became altered.

The deformity, in so far as it was produced by the aneurismal tumour, was completely removed before Mr. C.'s return home; but as this had produced an enlargement and forcing of the bones of the side of the face outwards, and as their absorption is a slow process, the face where the disease had been seated continues somewhat more enlarged than the opposite side. The absorption is however going on steadily, and there is every reason to hope, that by the employment of pressure, the natural symmetry of the countenance will be speedily restored.

ART. XII. *Case of Bronchocele, relieved by taking up one of the superior Thyroid Arteries.* By DR. HORATIO GATES JAMESON, of Baltimore.

MRS. KETTEN called on me for advice, some time in March last. I shall transcribe the case, as it has been briefly noticed in my note book.

The patient has been affected about 20 years, with a very considerable enlargement of the thyroid gland; and a tumour on the left side of the neck, of considerable size, and in some degree distinct from the principal tumour.

It is difficult to decide how the left lobe of the gland could have extended over so far, and under the carotid artery. But as the tumours, though somewhat separated, are nevertheless firmly united, we cannot think that a cervical gland could have become enlarged, and united thus firmly with the thyroid gland. The tumour on the left has commenced deep in the neck, for it has displaced the carotid artery, and probably the nerves.

The common carotid is found pulsating strongly immediately under the platysma myoides muscle, just behind the sterno mastoid muscle, and can be grasped by the thumb and finger, so as to draw it out. Pressure along the inner edge of the sterno mastoid muscle produces a painful drawing sensation about the eye, and a confusion of the head.

The superior left thyroid artery is found pulsating very strongly in the upper part of the tumour. Patient suffers considerably in swallowing, and in speaking, at times. Cannot at any time lie down without having her head raised very high. The whole tumour frequently becomes sore. She says it has been supposed by several medical gentlemen, to be a case of aneurism of the carotid. They were deceived by the circumstance of the left tumour commencing its growth very deep, and gradually raising the sheath containing the branch of the par vagum and the blood vessels. I determined to try the plan proposed and practised by Mr. Blizard, of taking up one or more of the thyroid arteries. Being anxious to have something done, the patient submitted to the operation on the 10th of May, 1821.

I made an incision, about an inch long, parallel with the trachea, and about midway between the trachea and the inner edge of the sterno mastoid muscle. Having reached the thyroid artery by a very cautious dissection, so as to avoid dividing any considerable branches of nerves, an animal ligature of suitable size was applied. The incision healed kindly over the ligature.

The patient being nervous and very delicate, suffered considerably for some days from tremblings, chills, giddiness, and loss of appetite. These symptoms gradually subsided; and she found, from the time of the operation, she had more freedom in swallowing; that she was free from the drawing (as she termed it) in the eye, and that she could lie down as long as she pleased, without even a pillow under her head.

A few weeks after the operation, the tumour is evidently smaller, hangs more loose and lower down, and is less painful. Previous to the operation, handling the tumour was always painful, particularly sometime after handling it, although it was lightly done. At this time, it gives her no uneasiness to handle it freely. In short, the operation has been greatly useful, and will, probably, at least, prevent any further growth; and I am of the opinion, that if the other superior thyroid was tied the tumour would nearly disappear.

I saw the patient lately, (several months after the operation) and found the tumour by actual measurement to be considerably less. She says it is no longer an inconvenience, and if it does not grow worse, she does not think it would be worth the pain or risk of an operation, for all the inconvenience she suffers. I hope this operation will be fairly tested in inveterate cases of bronchocele. If all derive equal benefit with this patient, it will be an operation of much importance.

ART. XIII. *An Account of a Case of Aneurism of the External Iliac Artery.* By Dr. HORATIO GATES JAMESON, of Baltimore.

Mr. H. W. had, some years since, received a severe injury in the right groin by a fall. He was extremely intemperate; and, following the business of a butcher, was subject to many hardships. About six months prior to the operation which I am about to relate, in a fit of excessive intoxication, he fell very awkwardly upon the floor, in such a manner as to have his knees strike the floor, and suddenly part; by which the pubis was brought down with violence. At this moment he felt a severe pain in his right groin; soon afterwards he felt a small pulsating tumour, in the part injured, which induced him to believe, notwithstanding the pulsation, that a bone was growing there, because the tumour was very hard.

Not being aware of the nature of the case, he neglected himself, and the tumour in a few weeks dilated into a large sack. When it had attained a size equal to three or four pounds of blood, he called on Dr. Clendinen, who apprised him of the nature of the case, and warned him of the risk attending delay. This advice was long neglected.

He was advised by this gentleman to avoid exercise, and undergo depletion; to avoid spiritous drink, entirely. He neglected himself much, moved about, and drank freely. The Doctor finding the case rapidly growing worse, I was called in, and requested to operate whenever I might judge it advisable.

I found the patient with a flushed face, hot skin, strong frequent pulse, having the aneurismal feel to a great degree. There existed a tumour which filled the whole right hypogastrium. By pressing firmly with the fingers along the abdomen, opposite the superior and anterior spine of the ilium, descending a little downward towards the pubis, one could most distinctly feel, that the sack terminated with a bold or thick edge on its upper surface. The whole tumour was pulsating very violently so that it might be seen to move the bed clothes. The skin was affected with an ecchymosis for several inches around the tumour. The skin over the centre of the tumour was spotted with yellow, and dark pur-

ple; and there was every reason to fear, from appearances, that gangrene would take place in a short time. The patient was in an agony of pain; his leg on the diseased side was considerably swollen, and the temperature of it a little above that of the other leg. This circumstance induced us to hope, that a new circulation had in some measure commenced. But the patient's habits were very forbidding; he had been stimulating freely, although his physician had positively forbidden it.

Under these circumstances, I agreed with his physician to try the effect of depletion, low diet, &c. for two or three days. On the 6th of May 1821, I met a number of my medical friends, before whom, after consultation, I gave the following opinion of the case. The patient is better in health than two days ago, is reasonably free from fever, and the shattered state of the pulse has become less evident. A small part of the tumour being below Poupart's ligament, and the principal part above, it is evident that the artery must have burst just under the ligament, or at the lower termination of the external iliac artery. In this part, the sack can have no other substance for the formation of its walls than the cellular structure of the part. The sack must then necessarily be very weak in its structure. Under these circumstances, I cannot be accountable for the risk of bursting the sack in the operation. But foreseeing such a risk, I shall, of course, endeavour to avoid it.

The aneurism having commenced about the femoral ring, we are to expect that the tumour has carried the peritoneum up before it; and it is to be feared that adhesions have been formed, which will either render it necessary to use considerable violence, to separate the peritoneum from the sack; or to cut open the peritoneum above the sack. From the immense size of the tumour, we cannot hope to find the artery sound any considerable distance below the origin of the external iliac. It is to be feared that we shall have to tie the common iliac; and this must leave but a slender chance of a new circulation being established through the leg. The disease is progressing rapidly, and must terminate very soon in sudden death, unless its progress be speedily arrested by an operation.

All the cases which I recollect, in which the iliac artery was taken up, differed from this in having the aneurismal sack formed

below Poupart's ligament. In Dr. Post's case at New York, the aneurism was in the thigh, but the artery was diseased nearly up to the bifurcation of the vessel. This circumstance prevented the Dr. from applying two ligatures, as had been most commonly practised. The case succeeded well, although the artery was not divided. With this precedent before me, and knowing that this method of the single ligature had succeeded on large arteries, in my own practice, and that of some others, I resolved to leave the issue of the case to a single strong animal ligature.

The patient having been properly placed on a table, took fifty drops of laudanum before I proceeded to the operation. I had resolved to follow the plan which had been adopted by Dr. Dorsey, of Philadelphia, so far as the circumstances of the case would admit. Owing to the peritoneum being carried up into the abdomen, and the skin being diseased over the aneurismal tumour, I made my incision about an inch higher up than did Dr. Dorsey. Still the angle of the wound lay on the diseased skin, and suggested the propriety of extreme caution in opening this part of the abdomen.

There was much reason to fear that there might be nothing but the skin to cover this part of the aneurismal sack ; and seeing that aneurismal diseases often remove bones, muscles, or whatever part falls within the sphere of their action, I was induced to act with great caution. Having by a slow and cautious dissection, divided the integuments in the direction of the fibres of the external oblique muscle, and having cut through a mass of fat, upwards of an inch in thickness in the upper angle of the wound, the tendinous fibres of the muscle were exposed. This dissection was rendered tedious and difficult by the great increase in the size of the arteries which were divided, and the circumstance of the lower angle of the wound being over a part of the tumour covered by the skin only, while the upper extremity of the wound was more than an inch in depth. This done, the internal oblique muscle was found so extremely tender, that it was with much difficulty it could be cut with a very sharp knife. The upper end of the incision was about two inches above the superior anterior spine of the ilium, and consequently I had to cut through the transversalis muscle, after having cut the internal oblique muscle, which had considerable thickness. I was now much gratified to find that I had cut

through the muscles immediately where the aneurismal sack, and the sack formed by the peritoneum, lay in contact. These two sacks lay in close contact, but no adhesions had formed, but such as could be separated with facility and without violence, by passing in the finger between them. The peritoneum was thickened and covered with a good deal of fat.

Having introduced the finger through the wound, (about five inches in length,) I easily discovered the external iliac artery pulsating, some distance below the superior brim of the pelvis. Being anxious to secure a sound part of the artery, and caring not how far I carried up the ligature, provided I placed it below the bifurcation, far enough to leave space for the external iliac to heal, I detached the artery about an inch below the bifurcation, where, I was satisfied the artery was perfectly sound. This was readily effected by means of the fore finger. A strong ligature of buckskin was now passed under the artery, by means of Physick's aneurismal forceps and needle.

The ligature was applied so high up, the artery lay so deep, and the way leading to it was so confined, in consequence of the sack formed by the peritoneum, (enclosing the bowels) and the aneurismal sack, pressing strongly towards each other, that the application of the ligature was attended with much difficulty. In performing this part of the operation, it is necessary to bear in mind, that the point of the needle should be held in the forceps, so that the eye armed with the ligature be passed under the artery. The needle can then be conveniently brought out from under the artery by the fingers or by the common forceps.

I now proceeded to tie the artery, and using every precaution to let the vessels lay as much as possible in situ, while it was tied, I passed my thumb down upon the artery, and lapped the ligature about my fore-finger. In this way I could tie the artery firmly, though deeply seated, and quite out of sight, without in any considerable degree disturbing the artery. Being intent on tying the artery firmly, and perhaps pressing at this moment, somewhat forcibly upon the aneurismal sack, it gave way, and there was a sudden gush of blood to the amount of about half a pound. I had however, secured the artery safely by a single knot. This circumstance produced a general consternation, among my medical

friends, who witnessed this operation; but it was soon found that all was well, the tumour ceased to pulsate, the patient was tranquil, with a good pulse. Dr. Chapman fearing I had not secured the artery, thrust in his finger, and caught hold of the artery. After all present were satisfied that the artery was tied, and the coagula removed, I proceeded to tie the second knot. The blood in the sack having probably soon coagulated no further hæmorrhage occurred. The ligature was now cut low down upon the artery. I found that the sack of the peritoneum, and that of the aneurism lay in close contact, so that there did not seem to be any risk of the blood of the aneurism, insinuating itself between the sack and into the abdomen.

Three interrupted sutures were used for the purpose of bringing the sides of the wound through the abdominal parietes into contact. An anodyne of forty drops of laudanum was given, and the patient was carried to bed; the leg covered with carded cotton. It continued warm, and there soon was perceived a pleasant, warm, gentle perspiration over the whole limb. In the evening a slight sense of numbness existed; this soon went off and he rested well all night.

It would be uninteresting to pursue the circumstances of this case in detail, I shall therefore briefly relate a few of the most remarkable circumstances connected with the case subsequent to the operation. The patient lived nine days; the affected limb was not materially altered in its temperature after the operation. Neither was there any evident diminution of sensibility in the limb; in general the limb was free from pain and numbness, once or twice the patient complained slightly of these feelings. The anterior tibial artery was felt to pulsate very distinctly in the foot, five days after the operation. On the sixth day after the operation, there were appearances of gangrene about that part of the skin, which had been much diseased, previous to the operation. This continued to increase, and the part ran into mortification; the patient was seized two days after the operation with severe symptoms of ordinary pneumonia, which debilitated him much, and probably contributed in a great degree to the unfavourable termination of the case. It was an encouraging circumstance, that there was not

at any time, any pain or soreness of the abdomen from pressure, which might in any degree denote inflammation of the peritoneum.

In short the circumstances connected with the case, induce me to conclude, that this patient died from gangrene, and that the gangrene arose from his depravity of habit, the consequence of intemperance long practised.

In presenting a summary of this case, we may remark, that the limb never lost its sensibilities, its warmth, nor its circulation ; that there was no peritoneal inflammation ; thatth ere was nothing like reaction, or an inflammatory condition of the system, consequent to the operation, a sure evidence this of great depravity or debility of habit; that the cough and other pneumonic symptoms, were accidental, and highly injurious to the patient; that the patient had less pain than common ; that the disease had been suffered to run on until the chance of success from an operation had been greatly lessened ; that the length of time the patient lived, was sufficient to prove that the operation was justifiable, and afforded all the advantages which could have resulted from the interposition of our art.

This last position derives confirmation from the circumstance, that on opening the body after death, the artery was found healed and the ligature still firmly tied about it. I was surprised to find that the artery had healed about an inch above the ligature, the vessel had changed into a small ligament that distance, and then suddenly or abruptly assumed its full size just below the internal iliac. This fact puts down Mr. Jones', notion of the necessity of dividing the inner roots of an artery, with a ligature to accomplish a healing of the vessel. The ligature in this case lay in close contact with the remaining part of the artery. The ligature although still firmly tied about the vessel, was reduced at least one half its thickness. The sack, or rather tumour for the aneurism, was formed of layers of membranes, indurated, hardened and thickened, and of coagula of blood, wonderfully interspersed through the irregular divisions of the tumour. The blood of the aneurism had acted upon the muscles and destroyed them in the lower part of the tumour, so as to leave no covering in that part but the skin. The membraneous partitions through the tumour already mentioned, were disposed in every direction, so as to form a kind of hollow net work, or cellular structure, having considerable strenght and thick-

ness. Some of these cells were of considerable size, one of the largest had burst, and gave rise to the gush of blood, during the operation. A considerable quantity of blood had escaped from one of the cells, aud lay in a coagulated state under the posterior part of the peritoneum. Through the part occupied by the tumour, the artery was entirely obliterated ; it was impossible to say where the upper portion of the artery terminated.

An important question presents itself here, whether it would have been advisable to have opened the sack, and to have removed the blood. I am inclined to think, where the quantity is great, it ought to be done; but it was evident upon dissection, that it could not have been effected in this case. The cells of partitions of which the tumour was constituted, could not possibly have been opened, so as to evacuate their contents, without doing extreme violence to the parts which would have increased the risk of inflammation and mortification. In one word the case had been too long neglected by the patient, the parts were too much indurated, and the depraved habit, which was the consequence of extreme intemperance, led to mortification, and this to inevitable death.

ART. XIV. *Case of Ovarian Dropsy, successfully removed by a Surgical Operation.* Communicated by Dr. NATHAN SMITH, Professor of Physic and Surgery at Yale College.

THE subject of this operation was a Mrs. Strobridge, of Norwich, Vermont, aged 33 years.

The following account of the case, previous to the operation, was taken from the patient:—Seven years before, she perceived a small tumour in her right side, situated in the right iliac region; when about the size of a goose egg, she could move it with her hand to the opposite side of the linea alba, and to some distance above the umbilicus. The patient had borne five children, two previous and three subsequent to her discovering the tumour. The youngest child was 10 months old, and was nursed at the breast when she submitted to the operation. Soon after her first pregnancy, from

the commencement of the tumour, and when, as she thinks, it was about 4 or 5 inches in diameter, it suddenly disappeared, probably burst into the abdomen. In 4 or 5 weeks it was as large as before. Before and after the bursting of the tumour she had turns of faintness, which lasted from two hours to half a day. During parturition of her second child, after the commencement of the tumour, it having acquired a considerable size, it burst again, and nothing was perceived of it till eight months had elapsed. In four days from its reappearance it was as large as it had ever been. It was again burst by a fall; great soreness of the abdomen, and confinement of the patient for several weeks was the consequence. The tumour filled again in a fortnight, and from this time continued to increase; it did not burst in the delivery of her last child, which was ten months previous to the operation. The patient's health was not much affected by the tumour. She was costive; and the size of the tumour incommoded her in the ordinary duties of her family, especially in stooping. On examination I found a large tumour in the right side of the abdomen; it was considerably moveable, and I could produce a distinct fluctuation through it.

Having decided on the operation, and determined the mode of operating, on the 5th of July, in the presence, and with the assistance, of Doctors Lewis, Mussy, Dana, and Hatch, I commenced the operation as follows:—

The patient being placed on a bed, with her head and shoulders somewhat raised, an assistant rolled up the tumour to the middle of the abdomen, and held it there. I then commenced an incision about an inch below the umbilicus, directly in the linea alba, and extended it downwards three inches. I carried it down to the peritoneum, and then stopped till the blood ceased to flow, which it soon did. I then divided the peritoneum the whole extent of the external incision. The tumour, now exposed to view, was punctured; a canula introduced, and seven pints of a dark coloured ropy fluid was discharged into a vessel, about one pint was spilt, so that the whole fluid was about eight pounds. Previous to tapping the tumour, by inserting my finger by the side of it, I ascertained that it adhered to some extent to the parietes of the abdomen, on the right side, between the spine of the ileum and false ribs. After evacuating the fluid I drew out the sack, which brought out with it, and

adhering to it, a considerable portion of the omentum. This was separated from the sack with the knife; and two arteries, which we feared might bleed, were tied with leather ligatures, and the omentum was returned. By continuing to pull out the sack, the ovarian ligament was brought out, this was cut off, two small arteries, secured with leather ligatures, and the ligament was then returned. I then endeavoured to separate the sack from its adhesions to the parietes of the abdomen, which occupied a space about two inches square; this was affected by a slight stroke of the knife at the anterior part of the adhesion, and by use of the fingers. The sack then came out whole, excepting where the juncture was made, and I should think it might weigh between 2 and 4 ounces. The incision was then closed with adhesive plaster, and a bandage applied over the abdomen. No unfavourable symptoms occurred after the operation; in three weeks the patient was able to sit up and walk, and has since perfectly recovered.

I was induced to undertake this operation from the following considerations:—The patient, though her health was not greatly impaired, was sensibly affected by the disease. She was quite certain that the increase of the tumour, in a given time, was augmented; probably, at no very distant period, it would destroy her. I had, also, an opportunity to dissect the body of a patient, who had died of ovarian dropsy, after being tapped seven times. In this case the sack was found to be in the right ovarium, which filled the whole abdomen; but it adhered to no part except the proper ligament, which was not larger than the finger of a man. I have seen two other ovarian sacks which were taken from patients after death. They had been tapped several times; the sacks were equally unattached, except to their own proper ligaments. Hence, I inferred, that in a case of ovarian dropsy, while the tumour remained moveable, it might be removed with a prospect of success. The mode of operating, practised in the above case, is the same as I have described to my pupils in several of my last courses of lectures on surgery. The event has justified my previous opinions.

*** The author, at the time of reporting the above case, was ignorant that Dr. Dzondi had proposed the attempt to cure ovarian dropsy by the introduction of a tent following puncture, that the dropsical sack might slough, and be withdrawn by forceps.—Vid. Medical Recorder, Vol. III. p. 63.

ART. XV. *Two cases of Amenorrhœa, attended with singular circumstances.* Communicated by R. LA ROCHE, M. D. of Philadelphia.

DR. EBERLE,

Agreeably to a promise, I some time since made, I now send you an account of two cases of Amenorrhœa, which have fallen under my immediate observation. They were attended with symptoms of a nature sufficiently interesting to entitle them to some pretensions to publicity.

Examples of cases analogous to the first of these, are I believe of rare occurrence. A few that are described in Bonetus, and some other authors, although presenting some features of resemblance with the one, the history of which I now communicate, do not, in other respects correspond with it. They, for the most part, seemed to depend on a calculous or gouty diathesis, and in no instance that I have been able to meet with, have I discovered the peculiar symptom dependant on, or influenced in its progress and disappearance, by a condition of the system similar to that, under which my patient, will be found to have laboured.

In respect to vicarious hemorrhages, arising from obstructed catamenia, the records of medicine furnish us with very many examples. The eyes, ears, pores of the skin, veins of the cheeks, and of other parts of the body, the salivary ducts, stomach, lungs, breast, umbilicus, anus, &c. &c. have all been known, on different occasions, to afford a monthly issue to a certain quantity of blood, by which the necessity of a regular uterine discharge, has in some respects been superseded. Notwithstanding, however, the multiplicity of such anomalies, my second case, being thought by you, worthy a place in the recorder, is at your disposal for publication.

Yours sincerely,

R. L. R.

CASE I.

The subject of this first case, a coloured woman of a very corpulent habit, and about 35 years of age, consulted me in August, 1820, for amenorrhœa under which she had laboured several months. I was informed by her, that she had been under the care of several physicians, and an old woman; had taken a variety of medicines, but to no effect, the retention of the menses still continuing obstinate. I moreover learned, that whilst in Baltimore a few years back, she had been salivated for some venerial complaints, and had since, made use of the decoction of sarsaparilla and guaiacum for rheumatism in her arms.

At the moment of my visit, she complained of vertigo, when in an erect position; of fulness and heaviness in the head, and of a difficulty in the articulation of words. Her pulse was full, but not accelerated, her bowels were costive, and hemorrhoidal tumours, to which she had been subject for a long time, had disappeared.

Notwithstanding the serious nature, and even urgency of these symptoms, my attention was wholly absorbed for a while, in the examination of, and in reflecting on a particular phenomenon I had never before witnessed myself, and a description of which, I did not then remember to have seen in authors. I allude to a discharge of a sabulous matter through the pores, of the cuticular covering of some parts of the body. This symptom which had made its appearance soon after the patient had become affected with the uterine obstruction, was attended with the following circumstances. Several times in the course of the day, she suffered from a burning heat in her neck, feet and hands; this, after continuing a few moments, was relieved by the issue through the skin, of the above mentioned granulous substance, which in colour, feel and size, bore great resemblance to common sand. Immediately after the appearance of this singular secretion, the sensation of unusual heat, gave way to one of opposite nature; she now complained of great coldness of the parts affected, (the temperature of which was not, however, lower to the touch, than was that of the surrounding ones) which was but of short duration, and followed by a return of the natural warmth of the skin. This sabulous matter, being with ease rubbed off, was collected in quantities, sufficient to afford me an opportunity of showing it to Doctor Monges, and some others of my medical friends, but not so as to permit its submission to a chemical analysis. It was preserved in paper during the space of several hours, after which it was found to have in part deliquesced.

This symptom, curious in itself, but furnishing no indication in the treatment of the case, was disregarded, and directing my attention to the removal of the cerebral congestion, which evidently existed, I had recourse to bleeding both general, and local from the vulva, together with active cathartics and stimulating pedeluvia. These medicines having their intended effect, were next changed to tincture of cartharides, and other emmenagogues, which (aided by matrimony) finally brought on a return of the catamenia, and with it a cessation of the sandy sweat.

This woman is now pregnant, and I was a few days ago informed, that the above symptom, which had not returned for upwards of 12 months, has appeared once, since her present condition.

CASE II.

In June 1820, I was requested to visit a woman, of weak temperament, and about 40 years of age, from whom I learned the following circumstances, which I was particular in noting at the time. She had had several children, and her confinements, in general, had been attended with profuse uterine hemorrhages; she had been very regular in her catamenial discharge until lately. During her first pregnancy, which was about seven years ago, the saphena veins of both legs, but more particularly the right, had become very much enlarged, and remained varicose ever since; she experienced no great inconvenience from this state of her extremities, and continued to enjoy good health, until about six months before I first saw her, when her catamenia became irregular, and finally, completely retained. She now suffered very unpleasant symptoms of cephalic derangement, which she was, however, unable to describe accurately, and which, without the assistance of art, was soon removed on the accession of a profuse discharge of blood from one of the right saphena vessels.

When my attendance was requested, a similar hemorrhage had already four or five times proved vicarious to the menses, and was attended with the following precursory symptoms. A few days previous to the time, at which the uterine discharge was expected, the patient complained of drowsiness, and sometimes slight vertigo, but was free from pain. The veins of the legs were now found much more distended than common, and one of those situated on the right extremity was discovered to be enlarged at a particular spot, so as to resemble not a little in form, size and colour, a red cherry.

On the usual day, nay even at the expected hour, this round portion opened, and afforded passage to a quantity of blood, so copious as to occasion great debility, and even in one or two instances to induce syncope. After recovering from this state of prostration,

she usually found herself well, free from the unpleasant drowsiness, and continued so until the next period of hemorrhagic effort.

Emmenagogues were prescribed, together with tonics, and the legs were directed to be bandaged by means of a muslin roller. This latter injunction was not attended to, and the medicines, from some unknown reason, after a few doses omitted. She soon went into the country, where without premonitory symptoms, she was suddenly attacked at the period of the expected hemorrhage, with menorrhagia, which being profuse and of long continuance reduced her considerably. The saphena vein did not open, and as soon as the discharge from the uterus had ceased she returned to the city, and again came under my care. Bark, elixir vitriol, nourishment, mild laxatives to remedy the constipated state of her bowels, were prescribed. Under this plan of treatment, aided by moderate exercise she gradually recovered her strength, and after permitting her enlarged veins to be compressed by bandages, was soon enabled to return to her usual avocations. I regret to have since lost sight of this patient.

Art. XVI. *A case of Metastasis.* By James M. Staughton, M. D. of Philadelphia.

On Wednesday evening, December 12th, I was called to see a child of seven years of age who was sick. I found him with a swelling of the submaxillary gland of the right side. It had been increasing in size since Sunday, and was now almost as large as a hen's egg. He had some fever, was very restless and during the night delirious. Various antiphlogistic means were employed, without much success. On Friday it had enlarged so much as to occupy the space between the lower jaw and sternum. This day his mother mentioned a symptom, of which I was not previously aware. It was a slight paralysis of his inferior extremities, which had existed, in a trivial degree, ever since he had been ill. On examination I found that it was with great difficulty he could move them, and that there was a slight tension of the skin over the right knee. At times he would complain of a sensation of pain, and re-

quest that they might be firmly grasped by the hands of his mother. On Saturday, the tumour diminished considerably, and the effects of the paralysis were less visible. On Sunday, a slight swelling, apparently anasarcous, of the penis and scrotum took place, and on that night the tumour bursted, externally, just below the lower jaw, about half way between the angle and the chin, and a considerable discharge of pus occurred; at the same time the paralysis and œdema disappeared. A general abatement of symptoms, as might be expected, now took place. It suppurated kindly all Monday and Tuesday. But on calling on Wednesday morning, I found that the orifice had closed, and that there was little pus remaining in the abcess. When I revisited the patient, about noon, I was informed that he had discharged from the rectum four or five ounces of matter, resembling that which came from his neck. The softness of his tumour had abated, and nothing remained but a hardness which is not unfrequently left by such abcesses. During Thursday he passed more of this matter by several stools, which most certainly bore all the external marks of pus. He has now recovered, in a good measure, his health and strength, but still some hardness remains about the place of the abcess.

ART. XVII. *A singular case of Habitual Somnolency.* Communicated by JOHN W. GLONINGER, M. D. of Lebanon, Pennsylvania.

IN the month of November, in the year 1819, I was requested to vist Mr. J. G—m, about eight miles from the place of my residence, when, after hearing a relation of the symptoms of the disease under which he had laboured for the last twelve years, I found him afflicted with a malady of no little singularity. He informed me that he was continually sleepy; that he slept eighteen hours at least, during the day, and that frequently in attending to his farm, as ploughing, seeding, &c. and even in conversation he insensibly, as it were, fell into a sleep. I was led to believe that the proximate cause, *or ipse morbus*, of the disease in question, was a turgescence

of the vessels of the brain, interrupting thereby its healthy functions, from his being a very athletic person, with a large head and neck, a form predisposing him to attacks of apoplexy, and the success of the practice that I pursued appeared to justify the opinion. I placed him under a rigid antiphlogistic plan of treatment. I blooded him repeatedly and copiously, gave him twice a week drastic purgatives, and ordered him to live abstemiously, until I had reduced him sufficiently to be placed under the influence of mercury, which I used internally and in the form of unction. His gums became sore in about ten days after the first exhibition of mercury, and in a few days after I found him profusely salivated. During the ptyalism I observed, to my great gratification, an amelioration of his case; he slept but little during the day, and every hope was entertained by me and his friends that by continuing the mercurial pills and ung. hydrarg. fort. a fortnight longer a cure would be achieved, which I was rejoiced to witness at the expiration of the seventh week from the time I commenced attending him. Two years have nearly elapsed since, and he assured me lately that his disease was completely eradicated. He is now able to attend to his avocation, which is that of a farmer, as well as he did prior to his being first attacked with the disease which rendered him so perfectly useless to his family, and a burden to himself.

Art. XVIII. *Case of Ideopathic Emphysema.*

Dr. Eberle,

On reference to my notes, taken at the general hospital, at this place, in the month of January, 1815. I find the following case, which, as it is comparatively of rare occurrence, I think too important to be lost.

Respectfully,
Your obedient servant,
ROBERT ARCHER, U. S. A.

"A patient was admitted this month, with Typhoid Pneumonia, attended by severe diarrhœa. The usual remedies were resorted to, without any sensible effect; nature seemed to be exhausted, and

death was momentarily expected, to rid him of his sufferings. In the morning I found his whole body *emphysematous*, particularly his face, neck and breast. From this moment, he began to recover, and by the time the emphysema had disappeared, which was within 10 or 12 days, he was able to walk about the hospital. The remedies used, were of the simplest kind, together with frictions of camphorated spirits."

Cases of this kind are very uncommon. In the 3d vol. of the Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians, in Ireland, there is a case related by *Dr. Ireland*, very similar to the one here given by Dr. Archer. We extract the following condensed account of Dr Ireland's case, from No. 6, page 335, of "*the Medico-Chirurgical Review and Journal of Medical Science*,"* published in London, and edited by *James Johnson, M. D.* EDITORS.

A *Case of Emphysema, without external violence.*

By RICHARD STANLEY IRELAND, M D.

Cases of this kind are comparatively rare. A child nine years of age, was attacked with pneumonia, the violent inflammatory symptoms appearing to give way to the usual remedies, but a troublesome and distressing cough remaining, after a severe fit of which, a colourless swelling was observed above the clavicles. This swelling rapidly increased, extending up one side of the neck to the face, immediately after which the entire scalp became emphysematous, rendered unequivocal by crepitation. The respiration now became more difficult, and the cough doubly distressing; the pulse quicker, smaller, indistinct, and irregular; the face pale, and ultimately livid, with cold perspirations over the body. The little patient was bled largely by leeches every day, with temporary benefit. Scarifications would not be permitted, and the child died on the fifth day. Examination of the body was not allowed.

Dr. Ireland conceives that the emphysema was produced by the rupture of an air vessel in the lungs, from the violent exertion of coughing; and that the air became diffused through the cellular substance, connecting the lobules insinuating itself upwards between the pleura pulmonalis and lungs, at the root of which it escaped, occupying the space between the two layers of the mediastinum, whence it appeared above the clavicles, and soon extended to the parts before mentioned. Dr. Ireland remarks that he never before saw a case of this kind, nor does he recollect to have read of any. If he or the reader will turn to the 12th volume of the DICTIONNAIRE DES SCIENCES MEDICALES, page 6, *et seq.*

* We receive no periodical publication from any quarter, more replete with sound practical matter and enlightened criticism than this very interesting transatlantic cotemporary. We sincerely wish its success may be equal to its very superior merits.

he will find many curious cases and particulars illustrative of this subject. The following case, lately attended by the celebrated Dubois of Paris, is exactly in point.

"A child, thirty-two months old, was seized in the beginning of July, 1812, with violent convulsive cough, the paroxysms being of frequent recurrence. On the morning of the fifth day, a few moments after a violent paroxysm, emphysema appeared at the upper part of the sternum, whence it quickly extended under the mastoideus muscle, to the face, to the arm pit, and all the upper parts of the chest. In the evening of the same day, the emphysema was found to occupy the neck, the abdominal parieties, and the scrotum. The following day the upper and lower extremities were emphysematous, and the difficulty of breathing increased with the progress of the emphysema. Suffocation became imminent, and tracheotomy was impracticable from the great swelling of the neck; besides, such an operation appeared useless as the ruptured vesicle was at a great distance below. Dubois therefore only recommended anodyne and pectoral drinks to assuage the cough, and the whole body to be enveloped in compresses, soaked in aromatic wine. Under this treatment the respiration became gradually more free, and in the space of eight days the emphysema totally disappeared."

Op. Cit. p. 8.

Bromfield, Benjamin Bell, and some other authors, have stated that these accidents result occasionally from violent fits of coughing, crying, or even immoderate laughter; also in consequence of obstruction in the trachea. Hoffman relates a case of rupture of an air-cell, and suffocation as the termination. Meckel (Memoirs of the Royal Academy of Berlin, vol. vii. page 16.) states a case of emphysema, where, in consequence of an obstruction of mucus in the trachea, air burst into the cavity of the pleura of the right side, and suffocated the patient.

REVIEWS.

Quidquid venerit obvium, loquamur
Morosa sine cogitatione.
MARTIAL.

ART. XIX. *Practical Illustrations of the Typhus Fever, of the Common Continued Fever, and of Inflammatory Diseases, &c. &c.* By JOHN ARMSTRONG, M. D. Physician to the Fever Institution of London, with notes, critical and explanatory. By Professor POTTER, of Baltimore. Philadelphia printed, 1821, by JAMES WEBSTER. p. 468.

THE last twenty years have, we believe, produced a larger number of writers on the subject of fever, than the half of the preceding century; among these, we have every variety, from the immense system of Wilson arranged in full nosological array, to the simple "thoughts upon fever," by humbler, though not inferior writers. Among these we may safely say that none is more valuable than the "Practical Illustrations" of Dr. Armstrong. Although this work contains much interesting hypothesis, yet this is by far its least claim to our attention. It is as practical works, that the writings of Dr. A. are invaluable. The great number of facts they contain, and the minute accuracy with which they are detailed, are, we think, far more valuable than the speculations to which they may have given rise. Still it is not the less true, that these last discover a strength and originality of thought, which are quite characteristic of the mind of Dr. A. And perhaps we may be permitted to add that those who have known him as a friend, have been even more highly gratified by his uninterrupted mildness and benignity as a man, than by his display of intellectual talent as a writer.

In reviewing the work of Dr. Armstrong, we shall not attempt to give a full or minute analysis of it; for this would require a volumn half the size of his own; but we shall only notice some of the more prominent points, making such cursory remarks as may be suggested by the perusal.

Typhus fever is divided by Dr. A. into three varieties, the simple, inflammatory and congestive; and he gives us to understand, that he considers this division as applicable to all other species of fever. His description of simple typhus accords in many points with Fordyce's description of simple fever, as uncombined with any local affection whatever. Indeed we shall have occasion to point out one or two remarkable coincidences of opinion between Dr. A. and Fordyce. He considers typhus fever to consist of three stages, of oppression, of excitement and of collapse. He very justly remarks that the debility in the first and second stages is only apparent, arising from the excessive determination of blood to some internal and important organs, but that in the third stage, it is real. His description of simple typhus differs widely from that of Cullen, Wilson and other systematic writers, for the simple reason that he describes the typhus of nature, they the typhus of nosology.

In fact it seems a contradiction in terms, to suppose there can be a fever, which is asthenic from the beginning. It is commonly said, that the brain and nerves are the parts chiefly implicated in typhus fever; but he says, that the circulatory system is in a state of simple excitement or inflammatory tendency, without any local affection or determination. When these last appear, it becomes inflammatory typhus. It has indeed been doubted ever since the time of Fordyce, and even before, if there be any such thing as simple fever, free from all local determination, but as this is a simple matter of fact, it is, like all others, to be ascertained by evidence or observation, and all are at liberty to doubt or believe, as they see fit. We think we have often seen such cases, as have many other practitioners.

Under the head of inflammatory typhus, D. A. gives most accurate and minute descriptions of all the inflammations, both acute and sub-acute, of the organs contained in the head, chest, and abdomen; all of which, he says, may occur in combination with typhus. His distinctions between the acute and sub-acute forms

of inflammation, are perhaps more definite and precise than is warranted by nature, but there is no doubt, that important points of practice depend upon this distinction, and this certainly is not so bad as "the acute, the per-acute and not exactly per-acute," of Wilson. We shall see hereafter that very dangerous mistakes might be made in practice, by confounding all the forms of inflammation together. This form of typhus appears to have been very common in England, during their late epidemic, and affords a sufficient explanation of the great disposition there has been to bleed in all cases of fever.

In violent cases of congestive typhus, the stage of excitement is developed, very imperfectly or not at all; life being frequently extinguished by the excessive accumulation of blood in some of the important viscera, during the first stage. In this form of fever, therefore, the phenomena of febrile re-action scarcely appears at all. The description of this form of fever, agrees in many points with descriptions of many cases of our epidemic spotted, and yellow fevers, as described by Dr. Rush, and others. Where these cases of congestion are so suddenly fatal, Dr. A. seems to think it arises from the cessation of the heart's action, produced by accumulation of blood in the right ventricle of that organ, and in the adjoining large veins. But it seems doubtful, if congestion in any organ except the brain could be so immediately fatal; in fact, the symptoms in these cases are almost precisely the symptoms of oppressed brain, as described by Mr. John Bell. In this form of fever, Dr. A. thinks the veins are chiefly involved, the arterial system being often scarcely affected. That this is the fact in all those cases, which are strongly marked as congestive forms of fever, cannot we think be doubted; and we think Dr. A. deserves particular credit for having displayed the character and appearances of this form of disease, in so clear and able a manner. We do not know if he lays claim to any originality in his views upon this subject; we believe not, and we certainly think it of no importance to his reputation, which, we think, rests upon a far more solid basis. We shall perhaps at some future time recur to this subject of congestion, and the affections of the venous system. We certainly find in many writers, especially upon epidemic diseases, numerous descriptions of this obscure form of disease.

In the treatment of the several forms of typhus, there are some very important points of difference. In the first stage of simple typhus, he recommends an emetic, cathartic and the warm bath. When the febrile excitement is fully developed, the cold or tepid affusion is very serviceable; this is to be assisted by the constant, but mild operation of cathartics. No diffusible stimuli are to be given in the first or second stage, nor are they often necessary in the last, if proper attention has been paid to evacuations in the preceding stages, which must be continued in a grearter or less degree, even in the last stage.

In the inflammatory form of the disease, blood-letting is the first remedy in point of importance; in fact, the whole treatment is that, which would be proper in every internal inflammation, being varied according to the violence of the case; with this difference, however, that there is much greater danger of collapse, when the inflammation is combined with typhus, than when it is simple; of course evacuations, after the first period of the disease, must be used with greater caution, and the system be supported at the same time by mild nourishment, and slight cordials if necessary. Next to bleeding, he relies upon large doses of calomel, and upon small ones, combined with opium, in cases of subacute inflammation. But it is impossible to extract, in a short notice like this, all the important practical remarks, for which we must refer to the teeming pages of the book itself.

His remarks upon the treatment of the congestive form of typhus, are particularly valuable and interesting. In this form of fever, he conceives the system to be oppressed by the load of blood about the heart; the first thing of course, is to relieve the system of its load by free blood-letting, till the pulse rises; and it is extremely useful, to promote re-action at the same time, by the warm bath, in which indeed the V. S. may be performed. The bowels must then be cleared by injections and purgatives, which are very useful also in developing the excitement. He then administers calomel in doses of one scruple, frequently repeated, so as to produce ptyalism as speedy as possible, which, he says, is of immense importance in this form of fever. Diffusible stimuli are seldom necessary in this form of disease, unless great debility is present, and petechiæ, &c. appear. In these cases small

portions of carb. ammon. and Madeira wine are useful, but it is always safer to give too little, than too much. The cold affusion he considers utterly inadmissible in this form of typhus. The coincidence of this treatment, with that adopted by the venerable Rush, in similar cases of fever, is most striking, and must be regarded as a striking confirmation of the correctness of the views, of that most enlightened pathologist and practitioner.

The essay on typhus, is followed by some remarks upon the subject of common continued fever, inflammations, external and internal, and a variety of interesting febrile diseases, which we shall briefly notice. There is a striking coincidence with the views of Fordyce, upon the subject of continued fever, which we cannot help remarking; it is, that in strict propriety of language, the cold stage can hardly be considered a part of the fever itself, it being rather a step towards it, a preparatory state, if we may use the expression. This similarity of opinion, must have been known to Dr. Armstrong, though he has omitted to mention it.

His remarks upon the subject of blood-letting in violent cases of fever, are most excellent; he is not one of those, who are blinded by the modern mania for bleeding in all cases and forms of fever, but when he thinks it necessary, he uses it with that decision, which marks his character; and although he confides entirely in its potent remedial operation in all cases of violent disease, and pushes it to the greatest extent; yet he is extremely cautious in resorting to it in milder cases, or in the more advanced stages of violent disease; for in these last cases, it only tends to produce exhaustion, and to hasten their fatal termination. His remarks upon this subject, while they tend to give confidence to the young practitioner, and to nerve his arm for combating with violent disease, are yet very useful in checking that inordinate confidence in blood-letting, which would induce us to believe it a panacea in all stages of all complaints, and which, we have no doubt, has brought the remedy into discredit in this country, as well as Europe. Although we find constant and earnest recommendations of powerful depletion by the lancet in proper cases; yet those who abuse the remedy, will find no excuse in the writings of Dr. A., for they abound with minute descriptions of the particular kinds and stages of disease, in which bleeding should be avoided, and in which it would prove rather a bane than a blessing to society.

The writings of Dr. A. are in another respect most admirably suited to correct the medical prejudices of the day; we mean the overweaning confidence in the efficacy of our remedies, as superior to the power of the system in throwing off disease. This is in some degree a return to old and exploded doctrines, but it is not the only case in which a return of this kind has led to the discovery of truth. We have seen the justness of this remark most strikingly exemplified, in cases we have seen in the fever institution in London, when the patient's were not brought in till the 8th or 10th day of the disease; and when the symptoms were such as to threaten immediate dissolution. In our hospitals these patients would have been attacked with large doses of calomel, blisters, stimuli of every kind, the only effect of which would be to overwhelm the small remains of strength in the patient. Dr. A. remarked with his usual modesty, that if they recovered, it would be from the efforts of their own systems to throw off the disease, aided by any mild remedies. In these cases, with the aid of fresh air, warm coverings, and minute doses of calomel and castor oil, which unloaded the bowels of a vast quantity of foul matter, the patient's system rapidly rose, and they always convalesced more speedily and more securely than when they were treated in any other way. This confidence in the powers of nature is perhaps more warranted in typhus than in other acute complaints; still it is too much the fashion of the present day to deride all confidence in the powers of nature as foolish, and to trust the forcible operations of large doses of powerful mercurial and other similar remedies.

His remarks upon the subject of local inflammations, combined with fever, are most excellent. Too often have we seen an inflammation of this kind going on unheeded, or regarded only as a symptom of the disease; the practitioner forgetting that every disease is but an aggregate of symptoms, and that by relieving any one of them, the whole amount of disease was thereby lessened.

We would particularly draw the attention of our readers to Dr. A's. remarks upon the subject of Cullen's definition of synochus and typhus, in which he most forcibly points out the weakness and inconsistency of nosological divisions and descriptions of disease.

Dr. Armstrong next goes on to that of some of the principal external and internal inflammations, upon which subject his observa-

tions are highly valuable. His remarks upon the use of bleeding in these affections, are so good, that we cannot resist our disposition to give some account of them. He says that when he was in the habit, as is usual with European practitioners, to use small bleedings frequently repeated, he often had the mortification to see his patients grow weaker and weaker under the operation, while the disease went on constantly increasing. We have often remarked this in the treatment of peritonitis and other internal inflammations, supervening upon surgical operations in the European hospitals, in which all the treatment consisted in small bleedings, repeated for five or six days, but making no impression upon the disease; small doses of mild purgatives, leeches, &c. This is particularly the case in the french hospitals, where cases of this description much too frequently terminate in death. There is perhaps no point of practice in which the french surgeons and physicians are so deficient, as in the treatment of internal inflammations. It is true however, that since the publications of the valuable writings of Broussais, their practice is becoming much more energetic.

In all cases of this sort, it is the practice of Dr. A. to bleed early and copiously, ad deliquium, and this is repeated as soon as the pulse indicates the continuance of the inflammatory action. These remarks apply particularly to inflammations of the lungs, serous membranes, &c. In ophthalmia, in which disease, it is customary to waste immense quantities of blood in small bleedings, he is accustomed to make a strong and decided impression upon the disease, which seldom fails to put a stop to it at once. It is in cases of inflammation supervening upon operations for cataract, that this mode of practice is especially important, for in this case it runs rapidly on to a destructive termination. When enough blood cannot be taken at once, to make a sufficient impression he is in the habit of opening two veins at once.

We next find some higly interesting remarks upon laryngitis, or cynanche laryngea, of which disease Dr. A. seems to have had the opportunity of seeing an unusualy large number of cases. For a description of the symptoms attending it, we must refer to the work itself; we will only remark, that in common with all other practitioners, he found it a very fatal and unmanageable com-

plaint, having lost five out of eleven patients. The six first cases were treated by copious local and general blood letting, of which one only terminated successfully. In the five succeeding cases, he tried the effect of powerful antimonial emetics, which upon the production of full and copious vomiting, afforded great and immediate relief, one only of the five cases terminating fatally. The violence of the attack was such, that the disease terminated fatally in one case in seven hours, in another in eight. He met with another case in an aged woman, which terminated fatally, although relieved by the emetics for a time; in this case abscesses were found surrounding the larynx.

In the remarks upon acute rheumatism, there are some very interesting facts relating to use of colchicum in cases of this affection He says it has given more speedy and decided relief, than any one remedy he has ever employed. He even used it in some cases, when there existed internal inflammations in the head, chest or abdomen, and which were very much relieved by it; he gave in violent cases ℥j; and ℥ss in milder cases, of a tincture prepared from ℥ij of the recent root in ℥iv. of proof spirit. It. was aided by V. S. and laxatives; it caused no sensible evacution, but when beneficial it always produced these effects; to reduce the action of the heart, to diminish animal heat, and to relieve pain; relapses are not more frequent after the use of colchicum, than after other treatment.

Dr. A. enters most warmly into the praises of calomel and opium as a remedy in inflammation, the merit of the introduction of which he ascribes to Dr. Robert Hamilton of Lynn Regis. It is true that calomel has long been known as a remedy for inflammation; we even find it mentioned in a tract upon the use of simple medicines, by the celebrated Mr. Boyle, that he prescribed in doses of ℥j and grs. 30. in violent cases of dysentery and other inflammatory complaints. Still the use of calomel in combination with opium is not the less valuable or original on the part of Dr. Hamilton. It is proper to remark, that he always premises it by bleeding and purgatives. After the high and constant praises of calomel as a remedy for inflammation it should be strongly impressed upon the recollection, that whatever tends to produce or maintain a nervous or irritable temperament, renders a patient a less proper subject for the operation of mercury. For the same reason mercury should not

be used in the febrile complaints of children, except as a purgative, for their great irritability renders them eminently susceptible of violent impressions from the operation of mercury.

Thus have we terminated a very rapid survey of this highly valuable work of Dr. Armstrong, from which it is very easy to see the extent and variety of important matter it contains. We meant rather to call the attention of our readers to it, than to give a full account of its contents, for we must again repeat, that any approach to a full analysis of this book, must have far exceeded our limits, nor would there have been any advantage in it, as the work has been republished in this country, and cannot be too highly recommended as one of most unusual interest and value.

We are no friends to the practice so common in this country, of adding notes to new British publications. No sooner does a foreign work of respectable character appear among us, than some one seizes it, and sticks his name on the title page; and so author and commentator pass along right cleverly, the one on the back of the other.

With regard to Professor Potter's notes to the present edition, we willingly allow that many of them possess considerable value; there are some however, which *might* and a few which we think *ought* to have been omitted. We nevertheless have no hesitation in giving it as our opinion, that the usefulness of the present edition is considerably enhanced by the notes of the American Editor.

A.

Art. XX. *Remarks on a paper entitled,* "*The History and Treatment of Bony Tumours.* By W. Gibson, M. D."

The arrangement of Dr. Gibson's paper being extremely immethodical, our remarks upon it must necessarily be desultory. After discussing in the first part of the essay, in a loose and unsatisfactory manner, a variety of topics, and offering several unimportant conjectures; he says "many of the foregoing remarks will be illustrated by the following cases, which have occurred at different periods in my practice." On examining however, that portion

of his essay, which contains what are here termed, "the foregoing remarks," we find but two positions clearly laid down, and these are not sustained or illustrated by the cases he reports. The first observation therefore, which can be viewed in the light of a distinct proposition, is, that "this disease may attack any of the bones, *but the long bones of the extremities are commonly affected.*" A few pages further on, however, he observes, "the lower jaw seems *to be more subject to osteo-sarcoma than any other bone.*" We admit that even such contradictions in matters of this kind, are of trivial importance; they serve to show, however, that the Professor's observations on this point, could hardly have been the result of personal enquiry, but must have been compiled rather incautiously from the writings of others.

The next observation worth noticing is this: "In several instances which have fallen under my notice, the patient has died from confirmed phthisis pulmonalis." Let us see how far this observation is supported by the facts offered by the Professor. In the first case we are informed that a boy whose leg he amputated, was restored to health, and "in a few weeks grew fat and robust." Eight months after the operation, he was suddenly seized with dyspnœa, went to bed and soon afterwards died of confirmed phthisis pulmonalis. We do not think that this is legitimate deduction; for we can readily conceive that consumption may follow the loss of a limb by amputation, without having any connection with the disease for which the operation was performed. The inference that the disease of the lungs was remotely derived from the disease of the bone, is the less admissable, since out of thirty-one cases reported by the author, this is the only one which terminated in this way. It is true, the Professor alleges that the patient, whose disease is described in the second case, died of consumption of the lungs, *after enjoying excellent health for several months subsequent to a severe operation.* It gives us no pleasure to contradict the statements of any person, and in the present instance we caassure the Professor, that we do it "rather in sorrow than in anger;" yet we think it right to state, for we know it to be true hat this man did *not* live several months, nor even a single month after the operation, but that *he died of the effects of the operation.* This case therefore, offers him no evidence in favour of his posi-

tion, which indeed he has utterly failed to establish ; and it still remains to be ascertained whether there is any connection between osteo sarcoma and consumption of the lungs. If osteo-sarcoma be a cancerous disease, and if it holds an intimate relation with pulmonary consumption, as our author seems to think, should we not see the same relation subsisting between this latter disease and cancer of other parts of the system ? That there is no such connection however, between cancer and phthisis pulmonalis is a point we believe well established.

" When young persons are attacked," says Dr. Gibson, " a perceptible alteration is soon evinced in their general health and appearance; they become sallow, thin and debilitated, and the bowels are alternately constipated and relaxed." We are then told that osteo-sarcoma " appears sometimes as an hereditary disease," and that Boyer has related a case where " the father, brothers, and sisters, &c. and the children of a woman thirty years of age, who otherwise enjoyed excellent health, had bony tumours from their earliest infancy." There appears to us much inconsistency in all this. Boyer says, osteo-sarcoma is a cancerous affection of the bones ; according to these sentiments therefore, we have here a cancerous disease prevailing during a whole life without doing the least injury, and yet we are told, what no doubt is correct enough, that osteo-sarcoma, soon " impairs the general health." The tumours mentioned by Boyer, could therefore, not have been hereditary osteo-sarcoma, but nothing more than cases of indolent exostosis, except in the woman who submitted to amputation in consequence of an exostosis of the thigh degenerating into osteo-sarcoma.

With regard to the remedial treatment of osteo-sarcoma in its incipient stage, our author proposes the use of leeches, blisters frequently repeated and kept open with savin ointment. Low diet conjoined with purgatives, moderate pressure constantly applied, &c. We are disposed to question the fitness of low diet and purgatives in many cases of this disease. If we adopt the idea of the scrofulous nature of osteo-sarcoma we should have strong scruples against a diet greatly reduced. We are aware that many scrofulous patients bear active purging with much advantage. We presume however, that no experienced physician would disagree with us in saying, that many cases of this disease require in addi-

tion to a light but nourishing diet, the use of bark, chalybeates, cold bath, &c. With regard to the application of blisters or of pressure it may be observed, that where the former are used, the latter cannot be resorted to, and vice versa, since either of these applications must be long and uninteruptedly employed, before any advantage can be derived from them; and it is obvious that pressure is out of the question, where the surface is blistered, nor can blistering be used where pressure is employed.

The author informs us that the oxy-muriate of mercury and sarsaparilla, are greatly extolled by Mr. Cooper in the cure of such tumours. In cases depending upon a syphilitic taint, this remedy, will, we are persuaded, very generally afford advantages. Few practitioners however, at the present day, would advise the use of mercury in any form of scrofula. And it does not appear to us that Dr. Gibson recommends the use of this remedy upon very consistent principles; since he seems to be of opinion that the disease in question is either of a scrofulous or cancerous nature, in neither of which diseases does mercury appear to be proper.

At page 93 the Doctor concludes an interesting case, which he quotes from John Bell, with the following remarks. "The above case is calculated to show in a manner, with how little prospect of success we can undertake to remove an osteo-sarcoma of any magnitude, involving the whole circumference of a bone; but it still remains a question whether such a tumour, while in its incipient state, of small size, and seated on one of the bones of the forearm or leg, might not be successfully extirpated." Immediately afterwards he says, that in many cases of osteo-sarcoma "all our operations will prove unavailing. This remark will apply to amputation, for it has been decidedly ascertained that the lungs and other important internal organs have been attacked in a very short time after the removal of a limb affected with the disease."

This language is discouraging indeed, and more especially when we are further informed, that even when a limb affected with osteo-sarcoma is amputated, we cannot remain idle spectators; we are still to harass the patient with issues and "constitutional remedies." This opinion, though sanctioned by Mr. Cooper, is, however, given we think in too unqualified a manner. A number of interesting cases might be adduced where patients were happily cured by am-

putating a limb, or even part of a limb. We shall content ourselves by giving the three following cases.—The two first are noticed by John Bell, and ought to have been given by Dr. G. to show, that although the man whose wrist was ruined, and who had to submit to amputation after a painful attempt to save his hand, affords an important precautionary lesson; that still Mr. Bell gives other cases highly encouraging. These cases immediately succeed the case noticed by Dr. G., and they are so truly interesting, that we are surprised at his having omitted to notice them. After giving an account of the unfortunate operation on the wrist, Mr. Bell continues, "But a charitable endeavour to save the hand of a poor labouring man, even when it involves us in a severe and fruitless operation, is not the worst error; the surgeon alarmed by the uncouth appearance of the hand, deformed by such a disease, and not calculating with due deliberation the individual bones that are affected, might rashly amputate the whole hand, where an useful part of it might be preserved. Among the cases of this nature that stand recorded, is one by Severinus, short, indeed, but not the less interesting. Hyronemus Damianus, a youth about twenty-two years of age, crooked, and of a puny habit of body, had his right hand so enlarged, as to be a burthen too great for him to bear: in lying, he laid it above his head; walking, he carried it with difficulty on his other hand; it was diseased chiefly by the enlargement of the phalanges of four of the fingers; the individual tumours you would have likened in respect to size to lemons, in respect to colour to rotten apples, being large, globular, and livid. These knobs or enlargements were plaited over each other, and the points of the nails projected like claws from the extremities of the several tumours. Men, of ordinary genius and resources, no sooner stumble upon a difficulty than they are alarmed, and fear magnifies every danger that is likely to affect their reputation or practice. Many surgeons, in a case like this, fearful, lest after a partial operation, the disease should return, would straightway have chopped off the hand. Severinus acted quite otherwise; cutting off each finger at the last joint, by which it is united with the carpus, he burnt the roots, and brought the parts to a sound and healthy cure: he thus preserved the hand, i. e. the carpus and the thumb, the form and something of the use of the part, for such a stump antagonizing the other hand, and assisting it would be very precious.

Mr. Bell notices a case from Merry, in which that surgeon amputated the whole hand, and has these remarks upon it: "Merry confesses (without being conscious how far in that case he was to blame) that one half of the hand was apparently sound; and that, upon dissection, the finger and thumb were found in their sound and natural state. How then can we acquit him of rashness in smiting off the hand of a boy of eighteen, with youth and health on his side, and all the world before him, when, by a less painful operation, he might have saved his thumb, forefinger, and wrist? Surely we may pronounce him wrong, if there be one word of truth in the case of Severinus."

We do not wish to be understood to say, that we are generally to expect a termination, as favourable, as has just been represented in the case of Severinus. But we do think that Dr. Gibson, by omitting to notice these successful cases, has placed the subject of osteo-sarcoma in too unfavourable an aspect. And he is the less excusable for so doing, since it appears but too manifest, that these cases were omitted that he might have the sole credit of reasoning upon these points, in such a way as to induce surgeons to make trial of partial operations; but at the same time taking care to speak in such doubtful terms, that if the partial operation should miscarry, he might not, in any great degree share the blame. Instead of his propounding questions, as to the reasonableness of partial operations, he ought to have given the facts stated by John Bell, who he must have known to have solved these questions by cases directly in point.

We shall now notice, briefly, the second case reported by Dr. G. In describing the operation, he says; "I soon discovered that all the ribs at the margins of the tumour were *annihilated* by caries, or else *expanded* into a spongy porous mass, and in fact, identified with the mass itself. Being satisfied of this fact, and well assured that the ribs beneath the swelling were *extinguished*, I resolved to cut through each, at the points connected with the circumference of the tumour. This I accomplished, though with considerable difficulty, by means of a strong scalpel." Was ever the description of an operation more unsatisfactory or less comprehensible. The ribs were *annihilated*, or *expanded* into a spongy mass; they were *identified* with the mass. Being satisfied that the ribs were

annihilated or *expanded*, and *identified* with the mass; and well assured that the ribs beneath the swelling were *extinguished* he resolved to cut through each rib. If we understand the Doctor here, he means nothing more than that the ribs were involved in the disease; and that therefore, the tumour could not be removed, without removing, at the same time, the diseased ribs.

We are told also, that the pleura was detached from the diseased mass, to the extent of six inches. Surely the Dr. must have lost his memoranda, or neglected to consult them; for it is scarcely credible, that so much diseased action could have gone on in the ribs and adjacent parts, without producing strong attachment of the pleura to the tumour. It must be familiar to every one, how readily the pleura attaches itself to the ribs, and how invariably it becomes condensed and thickened, from inflammation long continued. We have seen cases, where the pleura and mediastinum have been thickened to the extent of nearly an inch. We are of opinion, that this must have been the case in the present instance; otherwise the scalpel, with which the Dr. "cut through the *extinguished* ribs," would probably have passed through the pleura also, and thus proved eminently hazardous to the patient's life.

With regard to the use of the *scalpel*, for cutting through the diseased *ribs*, there are, we think very serious objections. Indeed we feel ourselves bound in conscience to express strong disapprobation of such a use of the scalpel; for wo betide the patient who submits to have the solid parts of his ribs cut through by such an instrument. If the pleura should happen to be of any thing like its ordinary thickness, the instrument would assuredly be plunged into the cavity of the thorax. That the Dr. cut through the solid parts of the ribs we infer from the circumstance of the wound through the ribs being "six inches" in diameter, whilst the cartilages do not extend so far from the sternum; Hey's saw is the instrument for such an operation.

Some circumstances occur in Dr. G's. fourth case, which seem worthy of notice. The patient "was of vigorous constitution, and enjoyed excellent health; *she* was at a loss to account for the formation of the tumour;" nor does it appear that the Dr. himself, was more successful, than this "cotton weaver," in accounting for it. If, however, we advert to the Dr's. movements in this case, we

can be at no loss in accounting for the patient's "suffering exceedingly." Here is a display of "curved knives," by which "small portions could be detached;" next comes, the "hammer and chisels," for "knocking away" the whole of the right side of the superior jaw! Then for clearing away the "vaccillating portions of the tumour," comes the pincers; then, again, the "curved knives, and a sort of *raspiaratory*." With these, "the whole antrum was soon cleared away, and the operation finished." And yet, *mirabile dictu*, there was but little hæmorrhage, in so much, that every one was "astonished." As the tumour, however, must have been very small, for "it could be felt," as we are informed "by introducing the finger into the mouth," much hæmorrhage could not have been expected. To remove the remains of the disease, the Dr. employed "arsenic and sulphur," as a topical application. We have not the least doubt, that this escarotic may have "destroyed the remains of the disease." To us, however, it appears eminently hazardous, to keep arsenic stuffed in the antrum, from which it must be constantly liable to get into the stomach. What, too, are we to think, of keeping open the wounded surface and the antrum, by a gaping slash through the cheek, for the purpose of introducing this poisonous escarotic? What unnecessary disfiguring here! The Dr. has not attended to the ingenious method which was adopted by Dr. Jameson of Baltimore, in the case of Underwood. If he had condescended to *profit*, by a case skilfully and successfully treated, he would have used the tube and caustic, as directed by that gentleman and obviated the awful disfiguration which awaits the unfortunate girl.

At page 102, the following very extraordinary note occurs:*

"It has lately become fashionable among British surgeons to tie up the *carotid*, and other large arteries, upon the most trivial occasions; with a view of diverting the current of blood during and after an operation. The ill success, however, which has hitherto attended the great majority of such exploits, may be considered a pretty fair comment upon the practice. The fact is, that the carotid may be tied with much greater facility than nine-tenths of the arteries of the body. Its exposed situation, and strong pulsation, would lead the merest tyro in surgery to its proper course. The extirpation of a common fungus or polypus of the antrum maxil-

* 5th No. Philadelphia Journal of the Medical and Physical Sciences.

lare is by no means a difficult operation to the surgeon, however severe or formidable it may be to the patient; and we really think that the danger, if it be considerable, of removing such a tumour, does not consist in the simple operation itself, as it ought to be performed, but in the additional and unnecessary irritation communicated by the ligature of the carotid, which of itself, and without any laceration of the face, would often be sufficient to produce death. The patients, if aware of their danger, might say to their surgeons, in the language of the frogs, "This may be very fine fun to you, gentlemen, but it is death to us." Dr. Physick, whose reputation is quite as high as that of any other surgeon, and whose patients have been, perhaps, as numerous, has never taken up the carotid artery in his life; for a very simple and obvious reason,—that he never found it necessary."

We have quoted this singular paragraph entire, that we may not incur the imputation of misconstruction, or intentional misrepresentation of its language. We shall now therefore proceed, for the purpose of exposing the uncandid and unprofessional tenor of this note, to examine its sentences separately. "It has become fashionable," says Dr. G. "among the British surgeons to tie up the carotid or other large arteries, upon the most trivial occasions." This we unhesitatingly aver is *misrepresentation.* For although Mr. Cooper took up the carotid, for the first time, so long ago as the year 1805, still this operation has as yet been performed but very seldom, compared with other capital operations. Upon what grounds, therefore, does Dr. Gibson tell us that the British surgeons tie the carotid "on the *most trivial* occasions?" Again: "The fact is that the carotid may be tied with much greater facility than nine-tenths of the arteries of the body." We should like to know where nine arteries can be found, that are more difficult to tie up than the carotids. But, what has this assertion to do with his allegation, that the British surgeons perform the operation of tying up the carotid artery too often? And how does he sustain this latter assertion, so rashly advanced against the eminent English surgeons who have performed this operation? Why, forsooth, he tells us that this artery can be taken up more easily than nine-tenths of the arteries of the body. The "merest tyro," he says can perform this operation. Indeed! this is excellent logic! As there is however, no connection between the *propriety* of an operation, and the degree of difficulty to be encountered in performing it, we are

led to suspect that the Dr. must have had some concealed motive for making this operation look so very trivial. For he certainly cannot expect to induce surgeons to perform this operation more seldom by assuring them that the "*merest tyro*" can perform it. Again: "The ill success however, which has hitherto attended the great majority of such *exploits*, may be considered a pretty fair comment upon the practice." This observation will be answered by a selection of cases from different works, and with which we shall conclude this paper. He next observes: "The extirpation of a common fungus or polypus of the antrum maxillare, is by no means a difficult operation to the surgeon." And what has this to do with the propriety or expediency of taking up the carotid artery,—the position with which the Dr. sets out? We were not long at a loss to account rightly for this twisting, and turning, and anxiety of the Doctor to make this operation appear at once so *very simple*, and so *very hazardous*. We will relieve the reader from the doubt in which he may be. The fact then is, that some very important operations have been performed in Baltimore, by professor Pattison and Dr. Jameson, in which all the positions of the Dr's. note are involved. *Hinc illæ lachrymæ.* It is extremely unpleasant to arraign a man's motives in any transaction, but more especially in matters of science. The present instance of disingenuous conduct, is however too conspicuous to be passed by, without some corrective animadversions. We presume then, that the Dr. was unwilling to have it supposed that any great operation had been performed at Baltimore, which had not been previously performed at Philadelphia; and that he was therefore led not only to deny the utility of the operation, but also, to tell us, in emphatic language that these operations are very "trivial." And hence we are told that this operation is replete with *mischief* and *extremely easy* to perform?

In reply to his assertion that the extirpation of tumours of the superior jaw, is by no means a difficult operation, we beg leave to refer our readers to his own operation on — Hilton. Here we have a frightful array of "crooked knives" of "hammers and chisels," of "cutting forceps," "*raspatories*," &c. and after all the cutting, and pinching, and knocking, and chiselling, and cutting again, and rasping, and tearing, the case is brought so far as only to require a repetition of the operation! that is, cutting open the

cheek and leaving it open, and put into a proper state for the introduction of "arsenic and sulphur!" an admirable specimen of the ease with which such operations are performed.

The cavelling objection, of "the unnecessary irritation communicated by the ligature of the carotid," will be answered by the cases we shall cite in the sequel. As to the fable of "the frogs," we shall let that pass as a lusty piece of humour.

"Dr. Physick," observes Dr. G. "whose reputation is quite as high as that of any other surgeon, and whose patients have been perhaps as numerous, has never taken up the carotid artery in his life; for a very simple and obvious reason, that he never found it necessary." It is to be regretted that Dr. G. should have thus used the name of the excellent man whom he has here pressed into his service. We feel a sincere and profound respect for Dr. Physick; and none can be more willing than we are to attest to the high merits of this worthy man. Yet can any one pretend to say, that because Dr. P. has never performed this operation, it should not be performed by others? Will it for one moment be imagined even by Dr. G. that before we perform an operation, we are to enquire whether Dr. P. has performed it? It is not for us to determine whether cases have occurred, in the practice of Dr. Physick, which might have been benefited by tying up the carotid. That must be best known to himself. The inference however, which Dr. Gibson evidently wishes to be drawn from this appeal to the practice of Dr. Physick, is disingenuous and unprofessional. Gentlemen of equal standing with Dr. P. have performed this operation; and if we adopt Dr. Gibson's rule for judging of the propriety of an operation, we must conclude that all the eminent surgeons who have taken up the carotid, were either wickedly or unskillfully employed. Dr. Gibson too, having never taken up the carotid, must by the same rule of judging, transcend in judgment all those surgeons who have performed this operation.

We shall now proceed to notice briefly, such instances as have come to our knowledge, in which the operation of taking up the carotid has been performed. And we are greatly mistaken if these cases do not present positive proof that Dr. Gibson, has expressed himself rashly and uncandidly, and in a manner by no means creditable to his professional acumen.

So early as 1805, Mr. A. Cooper took up the carotid artery for aneurism; the patient lived 21 days. Mr. Cooper was satisfied the patient did not die on account of the operation.

Soon afterwards Mr. Cooper operated again and succeeded completely in *curing the patient; immediately after the operation the patient was relieved of a severe headach, which never afterwards returned.*

In 1812, Dr. Post of New York tied the carotid, no unpleasant symptoms succeeded, except a little chillness and disturbance of the circulation, at first, and a slight headach, for a few hours afterwards—patient cured.

Soon afterwards Dr. Post operated again for aneurism, the disease returned: patient none the worse for the operation.

Mr. Charles Collier, tied the carotid to prevent hemorrhage from the mouth; no unpleasant symptoms succeeded. *Dorsey's Surg.*

Richard Blagden, Esq. reports a case, in which the carotid artery was taken up, to arrest bleeding from the alveolus, from which a tooth had been drawn. Mr. Brodie, performed the operation. The patient continued to bleed from all the wounds, and bled to death. Here we have to acknowledge, that the operation did no good; but it is equally certain, that it did no harm; the patient laboured under an idiosyncrasy of habit, which necessarily rendered the case fatal. The patient lived a week after the operation.

Mr. Goodlad, tied the carotid to obviate hemorrhage in removing a tumour from the face. The tumour returned after 15 months. Mr. Goodlad has made some judicious remarks, upon the subject of tying the carotid. He says patients have been suffered to die, in cases of very vascular tumours, on account of the fears entertained of hemorrhage. That in operating upon vascular tumours, by applying a temporary ligature, to the carotid, we have a complete tourniquet, and a command over the bleeding, which we cannot otherwise have.

Mr. Wardrop, tied the carotid on account of a large tumour of the kind, he terms subcutaneous nævus. The child died on the 14th day, after promising, until the ninth day, to do well. The death could not be attributed to the tying of the artery, as no symptoms existed to raise such a presumption. This gentleman had a case of the same disease, which terminated fatally, although, the carotid was not taken up.

Mr. Vincent reports a case, which terminated fatally 22 days after tying the carotid. In this case it was observed, that there was some pain in the abdomen, which disappeared immediately, after removing the ligature. This case did not afford grounds for almost any hope, but, in so desperate a one, it was justifiable to try the only remedy which promised any thing at all.

Mr. Lyford reports a case, in which there was a perfect cure of aneurism, of the carotid, by the operation of taking up the artery. No unpleasant symptom attended.

Medico Chirurgical Transactions.

Robert Liston, Esq. reports a case, where the patient "had been afflicted with a constant beating pain in the left cheek and upper jaw, along the alveolar processes, stretching to the throat, and indeed involving the whole head."

It was found that strong pressure, upon the carotid, completely arrested the pain while it was continued. This induced the gentlemen in consultation, to hope that tying the carotid would remove the disease permanently. She was greatly relieved for some time, but the disease soon returned. It is true, the patient complained of pain in the back of the head. But it could not be said that the operation did her any injury; she lived long after the operation. This was an anomalous case, and was probably altogether irremediable. *Edinburgh Med. and Surgical Journal.*

Dr. C. R. Young, proposes tying the carotid in cases of unusual determination of blood to the head. But we are not aware that any one has performed this operation without more strongly marked reasons for doing so. *London Med. Repository.*

We are inclined to believe, no one can read the cases, of operations for the removal of tumour seated about the parotid gland or angle of the jaw, without perceiving how much the difficulties, so ably pointed out by John Bell, might have been lessened, by taking up the common carotid.

A case highly interesting has been recorded in the Medical Recorder, for the present year, by Dr. Jameson, of Baltimore. This case is well calculated to raise the hope, that tumours, however vascular, or however large, may safely be extirpated after tying the carotid. And there is every reason to believe, that what happened in this case, may happen again; viz. a perfect cure of a tumour

highly vascular, as was that in the case of Underwood; by first taking up the carotid, by which all danger from hemorrhagy is prevented, and then removing the mass of the disease, and afterwards destroying the roots of it with caustic. In the present number of our journal too, we publish an account of an operation communicated to us by Professor Pattison of Baltimore, in which a most alarming case of aneurism by anastomosis in the cheek was effectually cured by taking up the carotid artery.

We have now done with Dr. G's. paper; we trust we have used no unbecoming language, or been guilty, in any particular, of injustice towards this gentleman. It appeared to us necessary, to point out some of the erroneous principles inculcated in this paper, and to protest against the desingenuous allusions which it contains. For we lay it down as a principle, that the more elevated a writer stands, the more amenable is he at the bar of criticism for any delinquencies of which he may be guilty.

> Omne animi vitium tanto conspectius in se
> Crimen habet, quanto major qui peccat habetur—JUVEN.

J. G. H.

ART. XXI. *A Treatise on Indigestion and its consequences, called Nervous and Bilious Complaints; with Observations on the Organic Diseases, in which they sometimes terminate.* By A. P. W. PHILIP, M. D. F. R. S. Ed. &c. London, 1821, 8vo. p. 361.

INDIGESTION is a disease which has the strongest claims upon the attention and sympathy of the physician. The habitual dyspeptic is indeed miserable. His sallow and down-cast looks, his sullen taciturnity, his aversion to social enjoyments, and the occasional overwhelming despondency of his mind, show him to be the prey of deep and harassing sufferings, of which none, but those who have experienced them, can form an adequate idea.

When it is considered how essential to the welfare of the animal economy a duly elaborated chyle must be, and how extensive the sympathetic relations between the different parts of the system and

the digestive organs are, it cannot be wondered that disorders of their functions should produce such a train of various and distressing symptoms, as are presented to us under the vague names of bilious, nervous, and stomach complaints. Common, however, as indigestion is, and important as it must be considered in its consequences, there is perhaps hardly any other malady less perfectly understood, or more generally mismanaged.

The work before us is, therefore, well entitled to attention, whether we consider the interesting nature of its subject, or the great respectability of the source from which it proceeds. We do not, however, admire much the general construction of the work. It is carelessly put together, and abounds in passages that might have been omitted with advantage. The whole that is either useful or interesting in it, might have been conveniently compressed, without in the least maring its perspicuity, within perhaps half the compass of its present size. Still, however, the work is an interesting one, and well deserves an attentive perusal from every one who wishes to improve his views concerning the obstinate and harassing malady of which it treats.

The author divides indigestion into three stages.—The first stage is characterised by the common symptoms arising from the presence of undigested food in the stomach; such as flatulence, distention of the stomach and bowels, and acid and oily eructations. In the commencement of the disease these are often the only symptoms which produce any particular uneasiness. When they are suffered to continue, however, they always, sooner or later, involve the other parts of the alimentary canal in the disease. The secretions from these parts suffer morbid changes; those of the intestines, in particular, are for the most part not only diminished in quantity, but probably also altered in quality. In the progress of the disease, the general powers of the system begin to languish. The mind also begins to partake of the corporeal langour; the attention is commanded with difficulty, and an insuperable aversion to all mental exertion seizes upon the sufferer.

"While the symptoms thus proceed, a change sooner or later takes place, which marks an important step in the progress of the malady. The alvine discharge begins to deviate from the healthy appearance: it sometimes contains uncombined bile, sometimes it

chiefly consists of bile; its colour at other times is too light, more frequently too dark, and occasionally at length almost black; at different times it assumes various hues, sometimes inclining to green, sometimes to blue, and sometimes it is mixed with, and now and then almost wholly consists of, undigested bits of food. It often separates from the canal with more difficulty than usual, and leaves a feeling of the bowels not having been completely emptied. These symptoms only mark a greater degree of what has been going on from the first."

The urine also suffers morbid changes. It is sometimes covered with a very thin oily film,—sometimes it is limpid and copiously passed, but it is more frequently high coloured and small in quantity. It almost invariably deposits the red sediment, or lithic acid, on cooling. The patient, in the meantime, suffers from a variety of affections, depending on the irritation of the morbid contents of the alimentary canal.

"Pains of the stomach, more frequently of the bowels, and particularly of the lower part of the bowels, sometimes continued, generally of the griping kind; a sense of weight in the right hypochondrium or lower part of the abdomen, with unusual distention of the former, sometimes disappearing in a day or two, particularly after freer evacuations, and returning again at other times more stationary; a foul and clamy tongue, nausea, more rarely vomiting, a depression of strength, which sometimes, particularly after the unsatisfactory operation of cathartics, almost amounts to syncope, and a despondency that is hardly equalled in any other disease."

To these symptoms, which are characteristic of the *first* stage of the disease, others are added in its progress which distinguish its *second* stage. These are: a hard pulse, attended with slight febrile commotions,—a sense of chilliness, interrupted occasionally by languid and oppressive fits of heat. The symptoms, however, which appears more particularly to mark this stage of the disease, is soreness and uneasiness on pressure of the parts "close to the edge of the cartilages of the false ribs on the right side, after they have turned upwards to be joined to the sternum."

"This spot is often very circumscribed, and always lies about half way between the end of the sternum and the place at which the lowest of the cartilages begins to ascend; and the cartilage itself, near the tender part, often becomes very tender, not unfrequently indeed much more so than the soft parts. The patient, in general, is not aware of the tenderness till it is pointed out by the physician."

These symptoms which mark the second stage of Indigestion, are the result of an irritation communicated from the digestive organs to the hepatic and adjoining parts, and are the immediate forerunners of *organic disease*, which, according to our author, constitutes the *third* stage of the disease in question. The organic disease rarely takes place in the stomach or duodenum, but in other organs, which sympathise with these parts; as the liver, pancreas, spleen, mesenteric glands, heart, lungs, brain, &c.

"Many facts," says the author, "point out that long continued nervous irritation, at length terminates in inflammation of the organ affected. Even an affection, which, in the first instance is wholly sympathetic, arising from irritation applied to a distant part, will, if severe or long continued, terminate in inflammation of the organ sympathetically affected."

In the second chapter the author treats of the causes of indigestion. Preliminary to entering more directly upon this subject, he makes some novel and very interesting observations on the process of digestion.

With a view to ascertain the progressive changes that are effected in the food by the digestive process, the author "examined the stomachs of about a hundred and thirty rabbits immediately after they had been killed, in the usual way, which is by a blow on the back part of the head, at various periods of digestion." From these examinations, it appears that the new is never mixed with the old food in the stomachs of rabbits, that have lately eaten. "The former is always in the centre surrounded on all sides by the old food; except that on the upper part, between the new food and the smaller curvature of the stomach, there is sometimes little or no food."

"If, as we ascertained by more than twenty trials, the old and new food are of different kinds, and the animal is killed after taking the latter, unless a great length of time has elapsed after taking it, the line of separation is perfectly evident so that all the old may be removed without disturbing the new food."

This applies only to the cardiac portion of the stomach; in the pyloric portion, the food is always more easily digested, "the central parts differing less from those which lie near the surface of the stomach." The food is found the more digested the nearer it approaches the pylorus.

"It appears," says Dr. Philip, "that in proportion as the food is digested, it is moved along the great curvature, where the change in it is rendered more perfect, to the pyloric portion. Thus the layer of food lying next the surface of the stomach is first digested, and in proportion as it undergoes the proper change and is moved on by the muscular action of the stomach, that next in turn succeeds to undergo the same change." 61.

In relation to the influence of the gastric fluid on the stomach, the author makes the following interesting remarks.

"A person in good health was prevailed upon to abstain from eating for more than twenty hours, and further to increase the appetite by more exercise than usual. At the end of this time he was very hungry, but instead of eating, excited vomiting by drinking warm water, and irritating the fauces. The water returned mixed only with a ropy fluid, such as the gastric fluid is described to be by Spallanzani, or as I have myself obtained from the stomach of a crow. After this operation not only all desire to eat was removed, but a degree of disgust was excited by seeing others eat. He, however was prevailed upon to take a little milk and bread, which, in a very short time, ran into the acetous fermentation, indicated by flatulence and acid eructations. It seems an inference from this experiment that the pains caused by hunger may be prevented by constantly exciting vomiting, and the death, which arises from it, converted into that from inanition." p. 69.

Of the remote causes of Indigestion. The remote causes of indigestion act, either by deranging the secreting power of the stomach, in consequence of which the gastric fluid becomes unhealthy, and unfit to effect the proper changes in the food; or they debilitate its muscular power, "so that the food, though properly prepared, as far as it is brought into contact with the proper parts of the stomach, is neither duly so brought, nor regularly propelled into the duodenum." Among the principle causes of indigestion which act directly on the muscular fibres of the stomach, are narcotics, and other substances of an offensive nature, received into this organ. The author thinks that large quantities of very warm or very cold fluids received into the stomach have an immediate tendency to affect its muscular fibres. The most frequent cause, however, which immediately affect the muscular power of the stomach is inordinate *distention.* It is well known that the muscular power of the stomach, rectum and bladder, may be entirely destroyed for a time, by over-distention.

"The most common cause of morbid distention of the stomach is eating too fast; for the appetite only subsiding in proportion as the food combines with and neutralizes the gastric fluid, previously in the stomach, when we eat too fast, time is not given for it to combine with part of the food which is presented to it, till so much is taken that the whole gastric fluid, which the stomach is capable of supplying during the digestive process, is not sufficient to effect the due alteration on it; whereas when we eat slowly, so that a proper time is given for the combination to take place, the appetite abates before the stomach is overcharged; for while digestion goes on, and the gastric fluid is only supplied in proportion as fresh food comes in contact with the coats of the stomach, it combines with the food as it is formed and never excites the appetite.

"Every one has occasionally observed that if his meal is interrupted for ten or fifteen minutes after he has eaten perhaps not more than a third of the usual quantity he finds that he is satisfied. The gastric fluid which had accumulated has had time to combine with, and be neutralized by the food he has taken. It is for the same reason that a few mouthfuls taken a little before dinner will often wholly destroy the appetite, especially in delicate people, in whom the gastric fluid is secreted in small quantity, or of a less active quality!" 77.

The observations, contained in the above passage are extremely important, and cannot be neglected in the treatment of indigestion, without rendering all other remedial efforts in a great measure abortive. To eat slowly, and masticate the food well, is an injunction which ought to be strenuously enjoined upon Dyspeptics, and which can never be violated without much distress to themselves and almost certain defeat to the efforts of the physician. Very great relief, and even perfect cure from the distressing symptoms of this affection, may generally be obtained by the observance of this rule alone; but without an attention to it, we may venture to say that very few patients have ever received any permanent advantage from any course of medical or dietetic treatment.

Among the other causes which are apt to produce over-distention of the stomach, may be reckoned high seasoning, and great variety of food, by which persons are induced to eat after the natural appetite is satisfied; "or by the stimulus of the high seasoning a greater supply of gastric fluid than the food calls for is excited, and thus the appetite prolonged. "It is not by its effects on the muscular fibres of the stomach alone, however, that over-distention tends to produce indigestion. Its operation on the nerves of

the stomach is equally injurious. It is by this effect that it produces that peculiar pain, restlessness and sense of oppression which attend an over-distended stomach. Such irritation of the nerves of a secreting surface cannot exist without affecting its secreting power," and hence a morbid gastric fluid is secreted, which is unfit to effect a due change in the contents of the stomach, and whichgives rise to symptoms of indigestion. There are however, numerous other causes besides over distention, which are capable of deranging the nervous power of the stomach, and thus vitiating the secretion. Among these causes are: violent passions, particularly grief and anxiety of mind; intense application to business or study, excessive venery, &c. The sympathies of the stomach are so extensive indeed, that whatever greatly deranges the function of any important organ, is capable of producing indigestion.

Of the immediate cause of indigestion. In this section of the work we meet with many interesting observations, and deep philosophical views. As the changes produced in the stomach by the remote cause of indigestion, are fully considered in the preceding part of the work; he treats in this section, of the *manner* in which *this change* produces the various symptoms of the disease in question. The causes of indigestion, as has been stated, act by weakening either the muscular or nervous power of the stomach, or both. The manner in which this debility of the muscular and nervous power of the digestive organs produce the symptoms of indigestion, are extensively and ingeniously treated by the author. We cannot however enter into a particular analysis of this section, as it would extend this article beyond the limits to which we are obliged to confine it. We will therefore pass on to give some account of the *third chapter, on the treatment of Indigestion.*

The first thing which demands our attention in the treatment of indigestion, is to regulate the diet, and the due exercise both of mind and body. "The objects to be kept in view in regulating the diet in this disease, are, that it shall tend as little as possible to produce either morbid distention or morbid irritation of the surface of the alimentary canal." Eating with great rapidity, as has been stated above, is particularly apt to bring on over-distention. This must therefore be carefully avoided by such as are troubled with indigestion.

"The food, when we eat too fast, is not only received into the stomach in too great quantity, but is swallowed without being duly masticated and mixed with the saliva. It is thus presented to the stomach in a state in which the gastric fluid pervades, and consequently acts upon it with more difficulty. In this way eating too fast is injurious even when the patient abstains from taking too much. For this reason, *to eat moderately and slowly* is often found of greater consequence than any other rule of diet. The dyspeptic in eating, should carefully attend to the first feeling of satiety. There is a moment when the relish given by the appetite ceases; a single mouthful, taken after this, oppresses a weak stomach. If he eats slowly, and attends carefully to his feelings, he will never overload the stomach." 119.

If the food is of such a nature as to resist the action of the gastric fluid, or if the gastric fluid is of a morbid quality, it (the food) will run into fermentation, and thus give rise to over-distention of the stomach, although there be no error with regard to the *quantity* taken. It is therefore of primary consequence in the remedial management of this disease, to ascertain the kinds of food which are easiest changed by the gastric fluid.

"Acescent and oily articles of food," says Dr. P. "with a large proportion of liquid, compose the diet most difficult of digestion. It would appear that a feeble gastric fluid as indeed we might *a priori* suppose, does not admit of being greatly diluted without having its powers much impaired."

"The diet opposite to this then, is that which agrees best with dyspeptics. In the first stage of indigestion, a diet composed pretty *much of animal food and stale bread, is best.*

Hard biscuit or crackers are much to be preferred even to stale bread. The advantages from using this kind of bread, arise from the smaller bulk which it occupies in the stomach; principally, perhaps, from the slowness with which it obliges one to eat, in order to masticate it, in consequence of which more time is given to imbue it properly with saliva; by which a powerful cause of gastric debility and over-distention is avoided. The flesh of old animals, (with the exception of beef and veal according to our author) is easier of digestion than that of young animals. Our own experience does not accord with that of Dr. P. with regard to the relative facility with which beef and veal are digested. We are convinced from much personal experience, that to some stomachs at least, beef is incom-

parably more digestible than veal. The flesh of young contains much more mucilaginous matter than that of old animals: and all mucilages, as the author observes, are of difficult digestion. Animal jellies and young meats are what are commonly called *light* food; in relation to their irritating qualities, or their tendency to excite fever, this may be true; and hence in persons recovering from fever, or in extremely irritable habits, we prescribe the animal jellies or young meats which contain them, in a large proportion, in preference to the meats of old animals. But so far as digestion is concerned, the former are "*heavier* than mutton, and to many stomachs even more so than beef."

Mutton, to most stomachs is easier of digestion than beef. "All kinds of game are easy of digestion." Fish are generally less degestable than land animals. Geese and ducks, our author states, are the most oppressive kinds of poultry; "turkey is more so than fowl, which next to mutton, is, perhaps upon the whole, the lightest animal food in common use, if the skin be avoided." Pheasant is least easy of digestion of the different kinds of game. "Of all meat the lean part of venison is, perhaps, the most digestible; hare and partridge appear to be as much so as mutton." Eggs if they are eaten soft boiled with stale bread, are for the most part of easy digestion. The patient should however, confine himself to one, or at most two at a time.

New bread is one of the most pernicious articles of food to the dyspeptic. "This observation applies to every thing which by mastication forms a tenacious paste, which is not easily pervaded by the gastric fluid."

"On the same principle, food is often rendered more indigestible by processes employed with a view to assist the stomach. All articles composed of strong jellies, and food carefully mashed, are oppressive. The coarser division which our food undergoes in mastication, is better suited to assist digestion. Most dyspeptics find, that potatoes for example, finely mashed. although without any admixture, are more difficult of digestion than when properly masticated. During mastication the saliva is freely mixed with them, and a mass is formed which is easily pervaded. When they are mashed, they resist admixture with the saliva, as well as the gastric fluid." 125.

The following observation, is so entirely opposed to the common

opinion on the point to which it relates, that we cannot receive it upon the imperfect evidence which is offered in its favour by the author.

"It is generally known," says the author, "that the most concentrated decoction of beef, so far from nourishing, will not, if unmixed with something solid, even allay the appetite. A person under my care was attacked with severe pain of the face, when even the smallest quantity of any solid food was put into the stomach, a single mouthful of bread never failed to bring on the attack; and, as he at length refused all solid food, he was confined for some weeks to a strong decoction of beef; but, however strong, and in whatever quantity it was taken, it never relieved the calls of hunger, and he rapidly emaciated." 126.

To infer from this fact, that concentrated decoction of beef, will not in general afford the least nourishment, or allay the appetite, is certainly to indulge in unwarrantable generalization. In the case here related, a peculiar state of the digestive and chylopoetic organs may have existed, and without doubt did exist, which would have eventuated in the same result whatever, the patient's diet might have been.

Fresh vegetables, are accounted injurious in indigestion. Peas, beans, cabbage and waxy potatoes are particularly improper. "Mealy potatoes and turnips are among the best." All kinds of raw vegetables are highly injurious. Fruits also, are of difficult digestion; "particularly the cold fruits, melons, cucumbers, &c. Next to these, the mucilaginous fruits, gooseberries, pears, &c. are most oppressive. Apples and strawberries, the author observes, are the lightest. To most stomachs, the most acescent fruits, currants, mulberries, &c. are particularly offensive. Most stomachs bear acids better than acescents." Butter, our author affirms, is more oppressive than the fat of meat. Olive oil, he thinks is less oppressive to the stomach than butter. Fried meats are in general more difficult of digestion, than such as are boiled or roasted. Cheese is still more difficult of digestion than either butter or fat.

With respect to drinks, our author observes:

"In health when the various functions are in due porportion, little liquid is required with the food, the inhalation by one set of vessels nearly compensating for the exhalation by others. In in-

disgestion, the irritation of the stomach by the undigested food often excites a false thirst, as well as a false appetite. As it frequently induces the patient to eat, when there are no fluids in the stomach, adapted to the office of digestion, it excites him to drink when there is no want of fluidity in the various juices of the body; and when, so far from there being a want of liquid in the stomach, it is surcharged with vitiated fluids. The reader will easily infer from these facts, that much thirst is hardly compatible with good health, and the truth is, that the most healthy are little troubled with it."

"The best rules, I believe, which a dyspeptic can follow, are not to yield to every slight sensation of thirst, and when the sensation is considerable, to take but a moderate quantity, and that deliberately, for it is with drinking as with eating, if he swallows with too great rapidity, he will take too much." 134.

Water is evidently intended as the proper fluid for the dilution of our food. Fermented and distilled liquors, cannot, however, be wholly withdrawn from dyspeptics, where a habit of taking them has existed, without doing more harm than good. "Such are the habits of society, that more or less alcohol is necessary to support the usual vigour of the greater number of people, even in health. Nothing therefore, could be more injudicious, than wholly to deprive them of this support, when they are already weakened by disease, unless it could be shown, that even a moderate use of it essentially adds to their disease; which, in the instance before us, we shall find, is by no means the case, with respect to all the forms in which this stimulus may be taken." The malt liquors, are among the most improper articles of drink. They contain substances which are of very difficult digestion, and which are always particularly oppressive to the dyspeptic. Of the fermented liquors, cider is the best, provided the acetous fermentation has not commenced in it. Perry is often oppressive, on account of the quantity of mucilage it contains.

"The form in which alcohol is most beneficial, and in general does least harm, is that in which it exists in foreign wines. The astringent property of port wine, seems to give it a peculiar tonic power; and if it does not constipate, there is, perhaps no other wine so well suited to dyspeptics." 142.

Tea and coffee, our author observes, are injurious, when taken immediately, on account of the narcotic power which they possess.

"I have frequently seen severe fits of indigestion induced by them, always characterized by a greater than usual degree of nervous affections." With regard to the proper temperature of the drink of dyspeptics, there prevails, a diversity of opinion among writers. Dr. P. thinks that fluids of the usual temperature of the air are generally best suited to dyspeptics. A very low temperature is objectionable; nor does experience seem to favour the use of drinks of a very high temperature, although it must be confessed, some weak stomachs receive relief from the use of very warm drink. "The relief, however, thus obtained, observes Dr. P. is, like that obtained from distilled spirits, generally compensated by subsequent debility."

With regard to the quantity and frequency of the meals of a dyspeptic, our author makes some judicious observations. He thinks that three moderate meals in twenty-four hours, is sufficient. The last meal should be taken just before bed-time; and should never consist of animal food. We are entirely satisfied, that this is good advice. It is generally thought, that the evening meal should be taken some hours before lying down. To go to bed with a full stomach, is considered highly improper; judging from our own personal experience, and it has not been trifling, we are decidedly of opinion, that the system rests better during sleep, when the stomach is moderately distended with a mild and digestible food, than when quite or nearly empty. Our own experience too, accords with that of the author, relative to the impropriety of eating frequently, and during the intervals of the regular meals, unless, as it sometimes happens, the debility is very urgent, when the patient should take little and often.

"There is no greater mistake," says Dr. P. than that the dyspeptic "should constantly be taking something. This disturbs the natural process, and entirely prevents the recurrence of appetite, a certain degree of which is a wholesome stimulus to the stomach. The stomach by this constant eating becoming more and more debilitated, and every part by sympathy partaking of the debility, the patient wholly misapprehends the cause, and with a view to increase his strength, still increases the frequency of his meals, till he hardly passes a couple of hours without eating. By such practice, pursued for years, I have repeatedly seen debility of the stomach and a morbid irritability of the whole system established." 150.

The medicinal treatment of the first stage of this disease, is "divided into that proper while the disease is confined to the stomach and the bowels, and that which becomes necessary in consequence of its having spread to other parts."

The stomach and bowels of dyspeptics are generally found loaded, when we are first consulted for remedial assistance. It is therefore, almost always necessary to commence the treatment "by relieving them from some part of the load." An emetic is on this account frequently advisable in the beginning; this should be succeeded by a mild laxative.

"An emetic, in the early stages of the disease, seems sometimes beneficial by the excitement, as well as the evacuation it occasions. Its frequent repetition however, is injurious. If they are repeated at all it should only be for the purpose of removing urgent symptoms." 174.

If symptoms of the presence of offensive matter in the stomach and bowels still remain after the use of the emetic and laxative, "we must by gentle stimulants, particularly the distilled waters, occasionally mixed with a small proportion of some aromatic tincture, endeavour to excite these organs to a better secretion; and at the same time by the use of correctives, more directly endeavour to alter the morbid properties of their contents."

The alkalies, such as magnesia, lime-water and prepared chalk are the correctives for acidity. Where there is much debility, "a cold surface and a sense of sinking, connected with these symptoms," carbonate of ammonia is the best. An animal food tends to lessen, but cannot wholly prevent acidity. When the pains which arise from irritating matters in the primæ viæ, or from spasms excited by this irritation are not allayed by the employment of these means, an opiate is often of much advantage, care being taken to counteract its constipating tendency, by the subsequent employment of an aperient. Vomiting, if it supervene, is best restrained by the saline draught, taken in a state of effervescence, "or a mixture of sulphuric acid, conserve of roses, and mint-water carefully strained. When these fail the most effectual means, according to my experience is a pill composed of opium and camphor, and blistering the stomach."

The stomach and bowels having been brought "as nearly as

these debilitated functions admit of, into a natural state," such means must be used as are calculated to restore the tone of these organs. The remedies employed for this purpose, are divided into such as "tend to excite for the time, the particular function of the stomach and bowels, or allay the irritation of their nerves;" and such as appear to act, by bestowing on these organs some degree of permanent vigor. Ammonia and carbonate of ammonia are beneficial in that langour and coldness, which are often prominent features of indigestion. "They are more apt to strengthen and quicken the pulse than aromatic tinctures, or other temporary stimulants." Camphor approaches ammonia in its properties. Warm water is of essential service as a means of temporary relief. Its external application is often of great service.

"It deserves mentioning, although it is difficult to explain it, that a considerable degree of heat applied externally to the region of the stomach is more effectual, provided it be continually renewed, in relieving that kind of pain of the stomach, which most frequently attends indigestion, than any application of the heat we can make internally. It is also frequently relieved by heat applied to the feet." 181.

Opium in *small* doses is however one of the first means for temporary relief. Large doses are inadmissible, unless in very severe pain. The best form for giving opium is, according to our author, the pulvis ipecacuanha compositus. "From two to four grains of this preparation, given every six or eight hours appear to have a peculiar effect in allaying the irritations attending indigestion." 182. When nervous symptoms are connected with indigestion, myrrh, castor and valerian, either by themselves or in combination with assafœtida, are the best means of temporary relief. Ether, though highly beneficial in such cases, "approaches too nearly to the nature of distilled spirits to admit of its free and frequent employment." The principle thing however, in the treatment of indigestion is to prevent its recurrence. Bitters and astringents are the tonics on which we generally rely for this purpose.

"In the earliest periods of the disease, when it supervenes on debilitated states of the constitution, and the stomach still retains considerable comparative vigour, a cold infusion of the bark, according to our author, is often the most beneficial of all bitters.

But in the second stage, the less stimulating bitters are better; even gentian, which possesses perhaps the least stimulating property of all our bitters, is often too heating in this stage, and the bark cannot be borne, even for a few days. Astringents are not so applicable in the treatment of this disease, as tonic bitters. They tend to constipate. The mineral astringent tonics are the most beneficial of this description. In chlorotic indigestion, combined with stimulants it is the most powerful medicine we possess. Its good effects are increased by combining it with bitters and aromatics. 188. Next to iron, the sulphuric acid deserves to be ranked. Where sweating is too readily excited by exercise in this disease, it is particularly serviceable. The sulphate of zinc, is also accounted useful by some. It is best suited to the latter periods of the disease, and in combination with iron; it ought however, to be cautiously used, and if no good effects do soon follow, should be left off. Sarsaparilla, our author considers a valuable remedy in indigestion. It holds a much higher place, he says among the remedies of this disease than is generally supposed, but it is not to its early stages that it is best suited." 190.

Mercury is always injurious in the early periods of the disease, or while the derangement is confined to the alimentary canal. For the mere purpose of unloading the bowels, our author thinks it should never be given in this disease. To keep up a regular action of the bowels, he has found none of the aperients usually employed, "so generally useful as pills composed of ipecacuanha, compound extract of colocynth, and soap taken occasionally at bed time."

The cold bath, where there is considerable vigour, or the warm salt bath in great debility, are often important auxiliary means. The author has known the inspissated bile of the ox usefully employed as an aperient in indigestion.

When the alvine discharge begins to change from the healthy state and assumes an unnatural appearance, we may infer that the disease extends beyond the alimentary canal. Functional derangement of the liver, and perhaps pancreas has now taken place. We must therefore, now combine "with the means which tend to restore vigour to the alimentary canal, those which correct the morbid state of the liver." Mercury comes in here as our chief resource. But its exhibition must be cautiously managed, for "it unfortunately happens that its continued use is generally injurious to other parts of the system, and particularly to the stomach and bowels; and the chief object to be kept in view in its employment

in this stage of indigestion is so to manage its exhibition that it shall produce the desired effect on the liver, with as little injury as possible to other parts." 197. At this period of the disease, mercury, our author observes, should never be given so as to affect the general system; for it seldom fails to impair its powers. "Experience has amply proved, that the deranged action of the liver can, in consequence of sympathy which exists between this organ and the alimentary canal, be corrected in the first stage of indigestion by the *local* effect of the mercury on the latter." This may be so, but we are much inclined to doubt its correctness.

Our author counsels that at this period, mercury should seldom be continued long. After the healthy secretion of bile is restored it should be discontinued; if the bile reassume its morbid state, recurrence must again be had to the mercury. In the more obstinate cases however, a moderate dose of this medicine may be continued for a time, at stated intervals. The form too in which mercury is exhibited, is of much importance.

"It ought never" says Dr. P. "we may safely affirm, in the case before us, to be used externally; for we have no reason to believe that its action on the skin can materially affect the liver by sympathy; and we often find, that when exhibited in this way, it produces little effect on that organ, till the state of the gums shows its presence in the constitution." 200.

When the bowels are most languid *calomel* is to be used. When they are less so, the blue pill. "In the more recent cases, calomel taken at night, and carried off by a purgative draught in the morning, generally answers best." When the first few doses of calomel do not produce a permanent flow of healthy bile, we may in general produce this effect by using the blue pill every second or third night, as recommended by Mr. Abernethy. Some patients however, our author observes, find the blue pill so oppressive that they cannot be induced to take it.

"It is remarkable, that the blue pill is so offensive to some constitutions, that I have seen several instances in which it disordered the secretion of bile, even when it was healthy at the time of its exhibition; and in such cases, as far as I have observed, the disordered state of the bile continues as long as it is used." 204.

A mercurial plaster worn over the right hypochondrium, has

often been found of much advantage. in removing the soreness and distention of the liver. "I have known such a plaster worn for months, and even years, the symptoms constantly recurring when it was laid aside." 205

When from particular circumstances of idiosyncrasy, or from other reasons, it becomes necessary to leave off the use of mercury, we may substitute in its place some of the mineral acids. "In some cases, we shall find the dandelion an assistant to mercury, and under certain circumstances capable of being substituted for it." 207.

The author then passes on to "*The treatment of the second stage of Indigestion.*" "It appears," says he, "from what was said of the symptoms of indigestion, that they are liable, after the disease has lasted some time, to undergo a considerable change; the epigastrium becoming tender on pressure, the pulse hard, and some tendency to fever supervening. These symptoms characterize what I have called the second stage of the disease." As soon as the symptoms of this stage make their appearance, bitters and aromatics cease to be proper. They often increase the feverish restlesness, "and that languor and uneasiness which seldom wholly leave the patient."

"Nervous irritation," says Dr. P. "we have seen, if long continued, produces inflammatory action. When this fact is compared with the tenderness of the epigastrium and hard pulse, which supervene after long irritation of the stomach, laying aside other considerations, what physician can doubt that some inflammatory action or a state approaching to it, has supervened? An inference that is confirmed by the various symptoms, indicating a tendency to fever, which now appear. These circumstances led me to adopt a practice founded on them, and the immediate relief obtained, confirmed the views which had suggested it." 219.

In this stage therefore, stimulating remedies are to be employed with great caution, and our reliance placed on the judicious application of anti-inflammatory measures. *Leeches* applied to the tender part of the epigastrium, afford important advantages. "The effects from leeches thus applied, I found," says Dr. P. "were not merely that the tenderness was relieved, and the pulse softened, but that the patient breathed and walked better, that the bowels

were more easily moved, and the skin appeared more relaxed, the feverish tendency which frequently shows itself in the evening, being in the same degree lessened." 217. Blood-letting in this way also renders the employment of tonics more safe, in this stage of the disease. A blister applied to the part from which the blood was drawn "tends to increase the effect of the leeches and render it more permanent." The application of leeches in the more inflammatory cases, must be repeated, until the symptoms of inflammation are mitigated. When this has been effected, the lighter bitters and aromatics, can in general be borne, and will then be useful.

To obviate the inflammatory tendency, our author prefers, to all other medicines, "the nitrate of potash taken in a considerable quantity of water, in which a little gum had been dissolved." In such cases a freer employment of aperients are useful, although it will seldom be found necessary to procure more than two or three evacuations in twenty four hours.

When the foregoing means do not put a permanent stop to the inflammatory symptoms, "a perpetual drain established in the most tender part, is often followed with the best effect." As functional disorder of the liver is a constant attendant on this stage of the disease "the medicines which influence its secretion, always form part of the treatment." Mercury is of course, the chief remedy for this indication; but the use of it requires even more caution in this than in the first stage of the disease.

"I have generally, says our author, given a grain of the blue pill, sometimes only half a grain, twice or three times in twenty-four hours, until the secretion of bile appeared to be healthy, repeating these doses when it was again disordered; and by such doses, which may appear to many little better than trifling, I have seen the bile gradually restored to a healthy state, when larger doses had been employed in vain. The correction of the state of the bile, however, is but one of the effects of such a plan. Along with its improvement, the skin generally becomes relaxed, and of a proper temperature, the pulse more dilated, the colour and expression of the countenance better; and, in particular the expression of langour, so peculiar to the advanced stages of the disease, abates. It is nearly twenty years since I first adopted this mode of using mercury, in the case before us, and I have now great satisfaction in stating, that several men of experience in our profession, who,

at first, believing that no good could result from such minute doses, viewed the practice as little better than a waste of time, have since confessed, that it gave a degree of relief which larger doses could not have procured." 231.

When the mercury occasions irritation of the bowels, which sometimes happens, even from the small doses here mentioned, it should be given in combination with opium, extract of hyoscyamus, or conium. Our author speaks highly of dandelion in this disease. To derive any advantages from it, however, it must be given in very large doses. "It is best adapted to those cases, in which the bile is deficient or much disordered, while the power of the stomach is still considerable. In such cases, I have seen the patient restored by a strong decoction of dandelion used for common drink, without the aid of any other medicine." 236. In the progress of the disease, the secondary affections gradually gain importance, and if some one of the vital organs be much weaker than the rest, the disease fixes upon it, and changes materially the character and phenomena of the original affection. If no vital organ be more debilitated than the rest, the disease "gradually assumes the form rather of a general, and for the most part obstinate debility, than a disease of any one set of organs." We have now the general sympathetic disease to contend with, as being the most important. Here, the author thinks, mercury is of very doubtful advantage, in whatever way it be given. At this period of the disease, the constitution has generally already suffered much, from the mercury; and its effects, therefore, rather tend to lessen than support the general powers. In this part of the work, we find many important practical observations; which, however, we must pass over, from want of room. We shall therefore proceed to give a short recapitulation, in the author's own words, of that part of the work, which we have already gone over, and conclude our analysis, with a brief account of the 4th chapter, which treats of, *the third stage of indigestion.*

"In the commencement of the disease, we have seen, that the muscular and nervous powers of the stomach are enfeebled, and that the debility by sympathy gradually extends to the other parts of the alimentary canal, to the liver, and at length, more or less, to every part of the system.

The irritation caused by the contents of the stomach, which from the debilitated state of the nervous and muscular powers of this organ, have acquired morbid properties, at length produces a degree of inflammatory action, that is, debility of the capillary vessels and its immediate consequences, in the part of the stomach most exposed to it, the symptoms of which I have regarded as characterizing the second stage of the disease; and, as in the first stage the deranged function of the stomach produces a tendency to deranged function in every other part, in the second stage, every other part, in like manner, partakes of this inflammatory tendency. The pulse becomes hard, and inflammation is every where readily excited, particularly in the parts which most sympathize with the stomach, or are from other causes most liable to disease.

In the first stage, the debility of the nervous and muscular powers of the stomach is to be counteracted by attention to diet and exercise, and a proper use of stimulant and tonic medicines; and, in proportion as it is relieved, the sympathetic affections, which depend on it, disappear.

In the second stage, it is necessary to obviate the inflammatory tendency, and only to employ the means suited to the first stage, as far as they are compatible with this object; while our attention must now at the same time be directed to the parts sympathetically affected, in which, from the longer continuance of deranged function, and the inflammatory tendency prevailing throughout the system, the sympathetic begins to be changed into real disease.

The affection of these parts, we have seen, like that of the stomach, from which it arises, now consists in a debility of the vascular, as well as nervous, power. On these powers depend the secreting and absorbing processes, which are as necessary to the continuance of the healthy structure as the healthy function of the part; the only difference being, that, from the nature of the function, it is immediately affected, from that of the structure, its changes take place more slowly.

When indigestion has produced change of structure, it constitutes what I have called the third stage of this disease." 285.

Of the third stage of indigestion. The author finds the subject too extensive to enter into an account of all the organic affections which arise from indigestion. He therefore considers only "those cases, to which from their great frequency in England, his attention has been particularly directed; that is, the pulmonary affections produced by a disordered state of the digestive organs." 289.

No organ can be influenced by a distant part, unless it be through the nervous system. It may also be observed, that there is an intimate connection between the functions of the nerves, and that of the secretory vessels. "The nerves of a secreting organ

are never disordered without influencing the secreted fluids; and consequently without tending to influence the vessels which supply the fluids from which these are formed." 291. Hence, where there is long continued nervous irritation the vessels of the part to which the irritation is applied, or if those parts which sympathize with it, suffer functional lesions. In those cases however, " where the nerves are more liable to disease than usual, or the vessels less so, a permanent change in the former takes place, before the vessels become affected, this change occuring either in the nerves of particular organs, or in the general source of nervous influence; producing in the one instance permanent loss of power in a part, in the other, in the whole system."

The sympathetic affections of the lungs, particularly noticed by the author, are therefore of two kinds. In the one, the disease has extended to all the vital powers, which he terms *dyspeptic phthisis*, and in the other to its *nerves* alone, and which constitutes what he denominates *habitual asthma.*

Of Dyspeptic Phthisis. Dr. Philip, we believe was the first writer who directed the attention of physicians to this form of pulmonary consumption. In his *Treatise on Febrile Diseases*, he speaks of this species of consumption, and lays down the plan of treatment adapted to it. Since then, he has paid much attention to this disease; and the result of his observations and experience on this subject, are therefore entitled to particular respect. *Dyspeptic phthisis*, as its name implies, is generally preceded by symptoms of indigestion, but particularly those which indicate deranged hepatic functions. " Contrary to what is usual in other species of the disease, the spirits from the beginning are generally more or less depressed, and the countenance sallow." The cough is at first, commonly dry, and comes on in violent fits, generally after a full meal, or in lying down. The matter expectorated is at first limpid and glairy, it gradually changes to a pus-like substance, which in some instances is brought up in astonishing quantities. " I have seen," says Dr. P. " half a pint or more of a pus-like matter mixed with tough phlegm expectorated daily, when the the other symptoms were comparatively mild." The expectoration is frequently bloody. If this occurs after the second stage has commenced, the disease generally proves fatal. " While the blood

is mixed only with a transparent mucus, there may be good hopes of recovering." If there be no admixture of blood with the pus-like expectoration, there is also, reason to expect recovery.

The breathing is often much oppressed in the earlier stages of this disease when the patient is in a recumbent posture; and is commonly attended with a sense of stricture across the epigastric region. "There is often little or no pain;" if any is felt, it is commonly "a dull pain in the pit of the stomach, or pretty low down in the left side of the chest; more rarely the pain is in the same part in the right side." There is also not unfrequently some pain felt about the shoulders; there are also often darting pains in various parts of the chest, back, shoulders and legs; and head-ach is common. The hectic fever, almost always comes on at a later period in this, than in other species of consumption, nor is the emaciation as rapid here as in other varieties of this disease. The diagnosis of *dyspeptic phthisis*, does not however rest merely on the modification of symptoms common to all forms of this disease. There are other symptoms, "by which, with very little attention, it may always be distinguished—symptoms indicating a deranged state of the digestive organs." Flatulence, acidity, furred tongue, impaired appetite, and irregular bowels, harass the patient. Sometimes, as in other cases of dyspepsia, there is a morbidly increased appetite, which however craving it may be before eating, "fails after a few mouthfuls, and leaves a sensation as if there were not room for what had been taken." After some continuance of the disease, there is a sense of fulness and tension in the right hypochondrium, attended with a degree of tenderness on pressure.

"The connection between the dyspeptic and the pulmonary symptoms is evident by the latter increasing with the former, so that when the epigastric region is very full and tender, and the flatulence and acidity more troublesome than usual, the cough and dyspnæa are so also; and on the former symptoms subsiding, the latter likewise abate. Even the rising of wind from the stomach, often, for a time, removes the tendency to cough." 306.

In the advanced stages of this species of phthisis it approaches more and more to the other forms of pulmonary consumption. *On dissection*, the lungs are generally found in much the same state as in other cases of phthisis. Some traces of hepatic lesion

are however, almost constantly discovered. The spleen too is often found in a diseased condition.

Our author makes many interesting observations on the *nature* of dyspeptic phthisis. He dwells particularly on the extensive influence of the gastric sympathies, and the morbid phenomena, thence resulting. We cannot stop, however, to give a particular account of this part of the work; and we therefore pass on to the *treatment* of this disease, as laid down by our intelligent author.

"As it appears" says Dr. P. "both from the symptoms and causes of dyspeptic phthisis, that the affection of the lungs is influenced by the state of the digestive organs, it is reasonable to suppose that the means which tend to improve their functions will here be a useful auxiliary to those usually employed in phthisis. In indigestion we have seen that the function of the liver becomes disordered, and at length, some degree of fulness, and sometimes tenderness on pressure of the right hypochondrium supervene. It is after these symptoms have supervened, that this disorder of the digestive organs is apt to affect the lungs, and it is in proportion as we relieve them, that we find the affection of the lungs relieved." 322.

Dyspeptic phthisis presents us with three distinct stages, differing materially in their prognosis and treatment. At first the affection of the lungs, is merely sympathetic; and therefore ceases, as soon as the original affection upon which it depends, is removed.

"This stage, (the first) is distinguished by the short time which the disease has lasted: by the general mildness of the symptoms, the fever in particular being slight; and by there generally being no expectoration, but what the cough itself seems to occasion, consisting of a colourless phlegm, and for the most part in small quantity." 322. In this stage the disease is not commonly difficult to relieve, unless there is a strong constitutional tendency to a tubercular state of the lungs. It generally yields "to the usual means of relieving the cough and tendency to fever" combined with the milder parts of the treatment adapted to the second stage of indigestion. A grain of calomel combined with the compound extract of colocynth, when the bowels are languid, is to be given every second or third night, which if it do not pass off in a few hours after rising in the morning, may be assisted by a little epsom salts. As soon as the secretion of bile becomes healthy, the mercurial must be discontinued, and resumed again if the disordered secre-

tion recurs. All medicines possessing heating qualities are objectionable; "even gentian, so useful in the first stage of indigestion, seems often to increase the cough and tenderness of the epigastrium." Extract of camomile flowers, has been found the best adapted to such cases.

The treatment proper for the second stage of dyspeptic phthisis, "in which the continuance of the sympathetic affection has produced actual disease of the lungs," is essentially different from that which is proper in the first stage. The plan of treatment which the author proposes, and which he says he has employed for many years with much advantage, consists "of a combination of the most decisive treatment of the second stage of indigestion with that of phthisis."

One grain of blue pill in union with some mild tonic is to be given two or three times in the course of twenty-four hours, and either till the tenderness of the epigastrium yield; or the gums become somewhat affected by the mercury.

"I have already," says the author "had occasion to make some observations on the advantages arising from mercury given in minute doses. There is no case in which they are more conspicuous than this. As the tenderness of the epigastrium abates, and the state of the alvine discharges improve in by far the majority of cases, the pulmonary symptoms gradually disappear." 332.

This plan of treatment may be assisted by a succession of blisters over the tender part: when the disease is very obstinate "a permanent discharge from the tender part, especially that by a seton, often essentially promotes the cure." Our author disapproves of the external use of the mineral acids; they dispose to inflammation. Saline aperients are preferable to other cathartics. If the tenderness in the epigastrium do not yield, or the gums become tender in a fortnight, the dose of the blue pill is to be gradually increased, till one of these effects take place. "If either take place without relieving the pulmonary symptoms, the prognosis is bad."

In the second and last section of this division of the work, the author treats of *Habitual Asthma*. This disease, as we have already stated, arises according to the author, from a partial loss of power of the pulmonary nerves, in consequence of irritation in the

digestive organs, from indigestion. Now it has been ascertained by the author, that the galvanic influence, restores the functions of the lungs and stomach after having been destroyed by dividing the eighth pair of nerves.

"It appeared from repeated trials, that both the oppressed breathing, and the collection of phlegm, caused by the division of the eighth pair of nerves, may be prevented by sending the galvanic influence through the lungs. That this may be done with safety in the human body, we know from numberless instances, in which galvanism has been applied to it in every possible way." 344.

From these circumstances, our author was induced to look for relief in habitual asthma, to galvanism. "I have," says he, "employed galvanism in many cases of habitual asthma, and almost uniformly with relief; and have found the affection of breathing as readily relieved when it appeared as a primary disease, as when it succeeded to Indigestion." 345.

The galvanism is to be applied in the following manner. "Two thin plates of metal, about two or three inches in diameter, dipped in water, must be applied, one to the nape of the neck, the other to the lower part of the epigastric region. The wires, from the different ends of the trough, are then to be brought into contact with these plates; and as great a galvanic power maintained as the patient can bear, without complaint. In this way the galvanic influence is sent through the lungs as much as possible, in the direction of their nerves." 347.

We must now close our analysis of this very interesting volume. The author has undoubtedly laid the profession under no small obligation, for the instructive and luminous views he has given of dyspeptic affections. We have seldom read a book with more pleasure or improvement. And we think, that upon the subject which it treats, there is no work, in any language, which, in the present state of medical science, can supply its place. E.

ART. XXII. *A Treatise on Nervous Diseases.* By JOHN COOKE, M. D. F. A. S. Fellow of the Royal College of Physicians, and late Physician to the London Hospital, in two volumes. Vol. I. on Apoplexy, including apoplexia hydrocephalica, &c. with an introductory account of the opinions of Ancient and Modern Physiologists, respecting the nature and causes of the nervous system. Read at the College, as the Croonian Lectures, of the year 1819. 8vo. pp. 469. London, 1820.

WE cannot believe with Dr. Cooke, "that more real service may be rendered to medicine by the illustration of what is already known, than by any attempts to promulgate new theories, or new modes of practice." For however useful and interesting it may be to digest and treasure up the experience of our predecessors, their labours have by no means completely developed the pathology, or ascertained beyond the possibility of improvement, the treatment of any disease whatever. In the class of diseases to which Dr. Cooke has devoted the volume under review; our observation is particularly applicable. Much indeed has been done in this department, but much more remains to be done. We have yet a great deal to learn before we shall perfectly understand the nature of nervous disorders, and their treatment shall be reduced to a regular system. Dr. Cooke's treatise is not calculated to improve us much on these points; for under the influence of the sentiment which we have endeavoured to controvert, he has contented himself with collecting and arranging what other authors have said, without venturing to give us much of his own. This work is indeed a useful repository of facts and opinions, which have already been promulged; but it gives us nothing new. It is, however, a very respectable performance; and as such we recommend it to the study of every one who is desirous of knowing every thing that has been said on the subject of which it treats.

The work is entitled "A Treatise on *Nervous Diseases.*" But it by no means, fulfils the expectations which its title leads the reader to conceive. The author confines himself in the first part to the subject of Apoplexy; and promises a second volume, which is to complete the work, and in which he is to take up the consideration

of Paralysis and Epilepsy. This will indeed be but a very defective view of the diseases of the nervous system. But we are not so much concerned with the author's plan, as with the manner in which he has executed it. We invite, therefore, the reader's attion to an analysis of the work.

The volume commences with an introductory account of the opinions of ancient and modern physiologists respecting the nature and uses of the nervous system. The author begins with the obscure and imperfect notices of this subject which are to be found in the writings of Hippocrates, Plato, and Aristotle. He passes successively to the doctrines of Galen, Vesalius, Laurentius, and Haller; he developes the views of Bichat, Legallois, Dr. Wilson, Philips, and Mr. Brodie; he introduces to the reader the sentiments of Mr. Abernethy, the impious and flippant speculations of Mr. Lawrence, and the ridiculous fancies, and crudities of the German craniologists; and finally he gives a succinct, but sufficiently satisfactory abstract of the metaphysics of Sir Isaac Newton, Bishop Berkely, Mr. Hume, Dr. Reid, and Dugald Stewart. In this preliminary discourse, Dr. Cooke exhibits much more learning than is usually to be seen in medical publications of the present day. Indeed it is now so uncommon for physicians to be men of deep or extensive learning, that it has become unfashionable to adorn their writings with the evidences of their erudition, or to enliven the monotony of technical details by the exhibition of classical taste. Nor is it merely the affectation and show of learning which appears in Dr. Cooke's work. He exhibits too ready and complete an acquaintance with the authors to whom he refers, to have gotten his quotations second-hand, or to have turned over their pages to cull passages suited to his purpose. It is unnecessary, and it would be tedious and unprofitable, to detain the reader by any abstracts from this interesting introduction. He is doubtless already familiar with the opinions of at least, the most distinguished physiologists above enumerated. If he is not, we cannot refer him to a better book than the one under review.

We pass with the author to the more immediate object of the work, the consideration of *Apoplexy*. He treats first of its definition and history; secondly, of dissections and *post-mortem* appearances; thirdly, of its causes; fourthly, of its distinctions into spe-

cies; fifthly, of its diagnosis and prognosis; sixthly, of its treatment. The seventh chapter is occupied in the consideration of lethargy, coma, carus, catophora, &c.; and the last is devoted to apoplexia hydrocephalica, or hydrocephalus internus. Let us follow the author in the several divisions of the work.

The term apoplexy was employed by the Greeks, to denote a disease, in which the patient falls to the ground, often suddenly, and lies without sense, or voluntary motion. Hence persons so affected were called εμβρόντητοι, a term which signifies thunder-struck. It is doubtful, whether the signification of the word apoplexy, was fixed in the early periods of medical history, as we find Hippocrates, in one part of his works, characterizing the disease without designating it by this name, and in another applying the term to a disease which bears to it but a remote resemblance. Galen describes it as a disease in which a person suddenly becomes senseless, and loses all motion, except respiration. Paulus Ægineta added to Galen's definition, the absence of fever. The Greek writers seem to have considered apoplexy and palsy as diseases of the same nature. Thus Aretæus says, apoplexia, paraplegia, paresis, and paralysis, are all of the same kind, and consist in a defect of sensation, or of motion, or of both; and calls apoplexy a palsy of the whole system. Galen says, when the disease is general, it is called apoplexy, but when it happens to a part only, it is called palsy. And this notion seems to have been adopted by all the Greeks, as they speak in their writings of the leg, of the arm, of the tongue, &c. Celsus too, uses the terms apoplexy, and paralysis, synonimously. In the writings of modern nosologists, we find a great variety of definitions of apoplexy. Sauvages denominates it a most profound sleep, with stertorous respiration; and Linnæus describes it in almost the same terms. Cullen says, it is "a disease in which the whole of the external and internal senses, and the whole of the voluntary motions are in some degree abolished, while respiration and the action of the heart continue to be performed. By its being an affection of the whole of the powers of sense and voluntary motion, we distinguish it from palsy; and by its being with the continuance of respiration and action of the heart, it is distinguished from syncope." To this, Dr. Young adds, its sudden occurrence, and the stertorous breathing which attends

it. Mr. Good says, "apoplexy is mental and corporeal torpitude, with stertorous sleep." Portal excepts the stertor as a necessary symptom, and makes the distinction between apoplexia levis and apoplexia fortis to depend upon its absence or presence. Dr. Cooke himself defines it to be "a disease in which the animal functions are suspended, while the vital and natural functions continue; respiration being generally laborious, and frequently attended with stertor." This definition, although quite as correct as the most of those to be found in the books, does, by no means, convey an adequate idea of the disease. A definition should certainly designate the seat of the disease, as this is quite as important a circumstance as its external phenomena. The suddenness of its attack, the character of the pulse, the remarkable suffusion of the countenance which attends it, the peculiarity in the breathing, and the inflation of the cheeks which is to be observed in almost all serious cases of apoplexy, should also have been noticed in its description. And perhaps the definition given by Dr. Cooke, would apply as well to a common profound sleep.

The author goes on to enumerate the usual precursors of the disease, viz.: a dull pain in the head, vertigo, drowsiness, frequent incubus, cramps, ringing in the ears, faltering in the speech, loss of memory, torpor, &c. He proceeds to consider the particular symptoms, viz.: the character of the respiration, the frothy saliva which the patient spits out, the state of the pulse, the countenance, the appearance of the eyes, the condition of the excretions, fever, &c. He then remarks upon the general period of its duration, discountenancing the idea of its proving instantaneously fatal, and shewing that it usually lasts from eight to twelve, twenty-four, or forty-eight hours. He says that when it does not prove fatal, it generally terminates in a greater or less degree of palsy; and that the applexia fortis is invariably fatal.

The next chapter is devoted to the appearances on dissection. These he enumerates and severally examines in the following order: Blood, serum, pus, hydatids, tumours of different kinds, organic lesions, polypus, concretions, ossifications, and exostoses.—There is nothing original in any thing that Dr. Cooke gives us upon these subjects; and perhaps he might have given a more complete analysis of what Bonetus, Wepfer, Willis, Morgagni,

Lieutaud, and Baille, have written upon the post-mortem appearances of apoplexy.

In the third chapter are considered its causes. These are considered as they predispose to the disease, and as they actually excite it. The predisponent circumstances are hereditary conformation, advanced age, great heat or cold, a plethoric condition of body, and a leucophlegmatic, pituitous habit. The reader will perceive that these are the usual predisposing causes noticed by authors. In reading this chapter, however, he is almost led to consider it a matter of question whether these circumstances do really predispose to apoplexy or not; as the author seldom asserts that they do upon the authority of his own experience, and merely notices them as enumerated "by some authors," and as circumstances, which "are said" to have such an agency. His illustrations and examples are satisfactory and abundant. In proof of the influence of intemperate habits of life in inducing this disease, Dr. Cooke states that during an attendance of above twenty years at the London hospital, he never knew an instance of apoplexy at that establishment, and that it never occurs among the labouring poor unless occasionally from the inordinate use of ardent spirits. We would not question the correctness of this observation; but we think that the fact may find a more satisfactory explanation in the circumstance, that persons in an apoplexy are seldom carried to a hospital. Perhaps there is more intemperance among the lower classes of every community, than among persons of some distinction and importance in society; yet it is certain that apoplexy is less frequent among the former than with the latter.

The exciting causes of the disease are very numerous, but may be classed according to the manner in which they act in its production. Some act by producing pressure upon the brain; others by exciting an increased determination to that organ; and others, by preventing the free return of blood from its vessels. Dr. Cooke enumerates as the excitants of apoplexy, extravasations of blood, effusions of serum, hydatids, ossifications, exostoses, violent passions, undue exercise, intemperance, straining, stooping, ligatures about the neck, certain positions of the head, great heat, extreme

cold,* narcotics of various kinds, suppressions of accustomed discharges, certain diseases, &c.

The immediate or proximate cause, Dr. Cooke considers to be, "an obstruction of the passage of the nervous fluid into the organs of sense and motion." This is the commonly received pathology of apoplexy; but many other notions have been entertained upon the subject. Hippocrates considered it to result from a congestion or stagnation of the blood. Morgagni believed that it was produced by the extrication of air from the blood, stopping the circulation in the small arteries of the brain. Burserius thinks that it arises from an interruption of the connexion between the cortex cerebri and its medulla, or between the medulla and the parts concerned in sense and voluntary motion. M. Boucher declares it to consist in a defect in the transmission of the nervous fluid of the white part of the brain into the organs of sensation and voluntary motion; sometimes depending upon a diminution or deficiency of the nervous fluid, in consequence of debility or of profuse hæmorrhages; and sometimes upon a thickening of the blood into a solid mass, or upon a derangement of the secretory organ itself. Boerhaave, Van Swieten, and Vogel, have thought that it sometimes arises from a deficiency of blood in the brain, and have made a species of it by the name of *apoplexia defectiva*: and Selle and some others have supposed that it immediately depends upon a spasm of the brain.

In the fourth chapter Dr. Cooke examines the several distinctions of apoplexy which have been proposed; in the fifth he considers the symptoms by which it is distinguished from other affections, and those from which a judgement is to be formed of the event of the disease in particular cases; and then he proceeds to its treatment. The treatment he divides into those means which are to be used when apoplexy is threatened, the mode of proceeding in the paroxysm of the disease, and the remedies to be employed with a view of preventing its return. All these he points out with much minuteness, and with the judgment of a practical man. He

* A certain reviewer in the New York Repository, condemns Dr. Cooke for not noticing cold as an exciting cause of apoplexy. This remark shows how flippantly some men can talk about a book without having read it further than the title page.

is particularly judicious on the subject of blood-letting; condemning the objections of Fothergill, Heberden, and Brown, to this practice, and establishing its efficacy by the testimony of a large number of respectable writers. After reading the triumphant evidence adduced on this subject by Dr. Cooke, one can realize in some measure the feelings of the celebrated Dr. Frank when he exclaimed,—"I thank God that I have been converted from the heresies of the Brunonian doctrine, whenever apoplexy is the subject of my practice." Dr. Cooke has been rather cautious in recommending the abstraction of blood with so many provisos and reservations in cases of apoplexy in old age. Old people, who are not in a state of extreme infirmity, generally bear this operation as well as any other patients: perhaps we do not go too far in adopting the sentiment of Dr. Rush, that "it is more necessary under equal circumstances in that stage of life than in any other."

In his directions for bleeding in apoplexy, our author is not as particular as might be desired respecting the part in which the operation should be performed. Some practitioners abstract blood from the arm, some from the jugular, some from the temporal artery, and some from the foot. Dr. C. does indeed notice all these different modes, but does not discuss their relative efficacy, or give to any one the preference. He seems to consider the abstraction of blood as the great indication. But we really consider this as a very short-sighted view of the treatment of apoplexy. In our opinion it is equally important to effect a *revulsion*: and this cannot more certainly be done than by bleeding in the foot. It is evident that the application of a ligature to one of the lower extremities, and the immersion of it in warm water as is done in this operation, produce a copious derivation into the blood-vessels of the limb, and a proportionate revulsion from all other parts of the body. This effect, conjoined with the evacuation of blood which is here as well obtained as from the arm, must give a decided preference in these cases to vene section in the foot*. Nor is this merely our opinion. The practice is sanctioned by acknowledged pathological principles and by the countenance of some of the highest medical authorities. We may adduce in its support the names of Portal and Burserius.

* For a fuller developement of the doctrines of derivation and revulsion as applicable to blood-letting, see Am Med Recorder, Vol. iii p 461.

We are particularly pleased with Dr. Cooke's remarks upon the employment of *revellents*. We are of opinion that these should be much more frequently and diligently applied than they commonly are. It is altogether a mistaken notion, that the seat of a disease is the part to which remedies should be chiefly directed. Frequently more is effected by applications to a distant part, than by any thing which can be done to the part itself. He recommends the pediluvium as one of the means of relieving the head in these cases. Convinced as we are of the excellence of this practice, we have often regretted that the pediluvium is so little used in this country. We have no doubt that it will frequently relieve the head, when harsher means have been used without success. The propriety of the stimulating glysters which he directs may be doubted. It is undoubtedly proper to divert the blood from the brain by every possible means; yet this must be done without exciting a degree of action in the system which may counteract the effects of the depletions that have been used. Mild laxative enæmata would be much more beneficial.

As it regards the use of emetics in apoplexy, their exhibition must certainly be restricted, as Dr. Cooke observes, to those cases which clearly arise from an overloaded stomach. If ever admissible in other cases, it can only be upon the principle, "*melius anceps remedium quam nullum.*"

Lethargy, Coma, Carus, Cataphora, &c. which form the subjects of the seventh chapter, Dr. Cooke seems inclined to consider as so many grades of apoplexy. The treatment of them, must of course, be conducted upon the same principles.

The last chapter, which is devoted to apoplexia hydrocephalica, or hydrocephalus internus, as it is more commonly called, is a complete treatise upon this subject. It embraces every thing which has been written upon it by Whytt, Cullen, Cheyne, Fothergill, Clarke, Yeats, Coindet, Carmichael Smyth, Abercrombie, and Rush: and perhaps we may safely say, that their works contain every thing that is known on the subject.

Dr. Cooke concludes the volume by promising another in which he proposes to consider the nature and treatment of *palsy* and *epilepsy*, and especially the practice pursued in the present day in these important diseases. We look forward with a feeling border-

ing on impatience for the appearance of this promised volume. If executed with the ability which Dr. Cooke exhibits in this first part, it cannot fail to be a useful and interesting work. We could wish that complete treatises were written by persons as competent as this gentleman, upon every disease in the nosological catalogue. They would be far more useful than all the speculative systems upon which so much medical talent and learning have been wasted.

D.

ANALECTA.

Oil of Croton. A good deal of interest has been lately excited among the profession respecting this *new* and curious substance, a single drop of which produces copious and sometimes violent purging. We have been favoured with a communication from John Flemming, Esq. M. P pointing out accounts of this medicine published by preceding authors, and also by himself, affording another instance of the adage that there is "nothing new under the sun."

Murray, in the 4th volume of his Apparatus Medicaminum, page 149, gives the following botanical description of the plant from whose seeds the oil is obtained.

"*Croton Tiglium*, foliis ovatis glabris acuminatis, caule arboreo, LINN, *Sp. pl.* p. 1426. Cadel-Avanucu, *Hort. Malab. Tom* 2, *p.* 61. Rumphius also describes the plant and oil, in his *Herb. Amboin. Tom.* 4, *p.* 98.

We shall quote the following passage from Rumphius:—

"Sed tota stirps, potissimum tamen folia, valde acris, ita ut os, labia, fauces inflammatæ intumescunt, et ardor usque ad anum percipiatur. Radix granis mitior Olim grana per totam Indiam Orientalem Crebro in usu fuerunt *ad lympham hydropicorum per alvum præprimis eliminandam*, in iis vero, quorum ventriculus debilis, simul emesis subsequta. Fortioribus bina grana sufficerunt, aliis granum unum cum semisse. Variis aliis in morbis, *in quibus purgantia fortiora opportuna videntur*, ista in India adhibent. *Et hanc quidem acrimoniam oleo ipsi seminis inesse*, tam ex dictis, quam inde apparet, quod olei ex siccis granis expressi *gutta una* cum canariensi vino capta, vulgare apud chirurgos in India degentes purgans constituerit."—*Rumph Tom* 4, *p.* 98.

Another writer observes that the oil of croton rubbed about the umbilicus purges in the same manner as when taken internally.

In the 11th volume of the Asiatic Researches, Dr Fleming has published a valuable paper on the Indian medicinal plants and drugs, in which the croton tiglium is thus noticed:—

"The seeds of this plant were formerly well known in Europe, under the names of *grana tiglia*, and *grana molucca*. They were employed as hydragogue purgatives: but, on account of the violence of their operation, they have been long banished from modern practice. For the same reason they are seldom used by the Hindú practitioners, though not unfrequently taken as purgatives, by the poorer classes of the natives. One seed is sufficient for a dose, being rubbed with a little rice gruel, or taken in a bit of plantain fruit."*

We think the medicine in question is deserving the attention of the faculty at large.

London Medico-Chirurgical Review and Journal of Medical Science. No. 6. page 428.

*Some cases of tic douloureux have lately been relieved, and even removed, by a drop or two of oil of croton applied on the tongue. The effect on the nerve was almost instantaneous.—*Ed.*

Important Surgical Operation.—On the 17th November 1821, Dr. Mott of New-York, operated upon a young lady about 17 years of age, with an osteo-sarcomatous affection of the lower-jaw. The tumour involved the right side of the lower jaw, from about half an inch from the symphysis to beyond the angle, nearly as far up as the processes; occupied half the mouth; and extended to the avula, and downwards upon the neck, nearly to the thyroid cartilage. The carotid artery being previously tied, the first incision was made over the lower edge of the tumour, from a little above the lobe of the ear, in a semicircular direction by the side of the neck, and terminated on the chin near the corner of the mouth The incisions with the saw were made on the fore part of the bone, perpendicularly downwards, by the side of the first incisor tooth; and in a transverse direction, about one eighth of an inch below the semilunar line, which extends between the coronoid and condyloid processes. The wounds all healed kindly by the first intention, without the occurrence of a single unpleasant symptom; and the patient left the city for her home, perfectly well, on the 20th of December.

Dr. Hare's Calorimotor—In our observations upon Dr. Hare's Calorimotor, we expressed candidly what we then thought of this apparatus. We stated that we regarded the theory and the experiments offered in support of it, new and ingenious, but that the apparatus, itself appeared to us merely an extension of the elementary battery of Wollaston In making these remarks, we had not the remotest intention of giving offence, or detracting from the well deserved reputation of Dr. H. It may be that we have expressed our opinion precipitately, and without due inquiry into all the circumstances connected with the object in question; and we therefore derive pleasure in being able to present our readers with the following very handsome, and authentic testimony in favour of the merits of Professor Hare's apparatus. We are truly desirous of doing justice to every one. As editors, we have no resentments to gratify or favours to conciliate. We may err sometimes, but we are resolved not to persist in error when once we see it.

Professor Silliman, in the last number of his valuable journal of Physical Sciences, speaks of Dr Hare's apparatus in the following terms.

"I can say with truth that I consider your Deflagrator as the finest present made to this department of knowledge, since the discovery of the Pile by Volta, and of the Trough by Cruickshanks."

"I repeated every important experiment stated in your memoir, and with results so similar, that it is scarcely necessary to relate them. The combustion of the metals was brilliant beyond every thing which I had witnessed before, and the ignition of the charcoal points was so intense, as to equal the brilliancy of the sun; the light was perfectly intollerable to eyes of only common strength. If I were to name any metallic substance which burned with more than common energy, it would be a common brass pin, which, when held in the forceps of one pole, and touched to the charcoal point on the other, was consumed with such energy, that it might be said literally to vanish in flame"

"I congratulate you upon the brilliant additions which you have made to our experimental means, in this department of knowledge; along with your invention of the compound blowpipe, they fairly entitle you to the gratitude of the scientific world, notwithstanding the uncandid attempts which, in relation to the blowpipe, I am sorry to see, are still persevered in, to deprive you of the credit which you so richly deserve." E.

Hooping Cough—Dr. Robertson, in the January number of the London Medical Repository, states that of all the remedies he has ever employed in hooping cough, frictions on the region of the stomach, with the tartarized antimonial ointment have been the most undeviatingly useful. The eruption on the stomach is frequently accompanied by a moderate degree of inflammation about the pudenda in females, with a slight eruption of minute pimples, on the occurrence of which, the disease uniformly begins to abate.

LITERARY AND SCIENTIFIC.

MATERIA MEDICA AND THERAPEUTICS.

JAMES WEBSTER, is about to put to press, a treatise on the *Materia Medica and Therapeutics*, by JOHN EBERLE, M. D. one of the editors of this Journal. The work will be comprised in two volumes octavo, and contain from 450 to 550 pages each, to be printed on a fine paper and well bound. Subscription price to be from $ 4 50 to 5 00.

THE Proprietor of the American Medical Recorder, being desirous to render every possible information to the Medical Profession, has made arrangements with several competent Medical Gentlemen, whose names shall appear, to publish, *annually*, a volume of selections from the various Medical Journals, and other Scientific Medical Works, published in Great Britain and on the continent of Europe. Translations will be made of all important and interesting articles, connected with Medicine and Surgery, from every foreign language.

It is expected the first volume will be published in the present winter or ensuing spring; the volume will contain from five to six hundred octavo pages, with plates, when necessary; and shall be put at the low price of from $3 to $3 50.

Gentlemen subscribing for the above will be at liberty to decline taking the work, when published, if the conditions of the prospectus are not complied with.

January, 1822.

ELEMENTS OF CHEMISTRY.

DAVID HANNA of Philadelphia, is about to put to press, from the last Edinburgh edition, the Elements of Chemistry, in two volumes by JOHN MURRAY. M. D.

D. H is also about putting to press, from the 2d London edition, Practical Observations on the Disorders of the Liver and other Organs of Digestion, which produced the several forms and varieties of the Bilious complaints, by Joseph Ayre, author of the Essay on Marasmus, Physician to the General Infirmary and Lying in Charity at Hull, &c. &c.

MAGENDIE'S PHYSIOLOGY.

AN ELEMENTARY SUMMARY OF PHYSIOLOGY. By F. MAGENDIE. Translated from the French by a Member of the Medico Chirurgical Society of London, 2 vols. 8vo. with additions by a Practitioner of Medicine.

This work is much approved of both in Europe and this country; it will be reprinted in one volume, at a reasonable price. Booksellers, wishing to have it on exchange, will forward their lists to DAVID HANNA, Philadelphia. It is expected the work will be published by the time the Navigation opens.

SURGICAL ESSAYS.

James Webster having republished from the last London edition, the *first and second* parts of COOPER and TRAVERS's *Surgical Essays*, solicits the attention of practitioners to this highly valuable publication. For the convenience of purchasers *both parts* are bound up in one large octavo volume of 410 pages, with 21 plates executed in a style at least equal to the original. If the distinguished authors, at any future period publish more Essays on Surgical subjects, they will be reprinted here and collected in a *second* volume to match the present publication. *For the opinion of an unprejudiced and intelligent practitioner concerning this work, the reader is referred to the Review of it in the fourth vol. page 350 of this Journal.*

William Zollickoffer, M. D. of Baltimore, is preparing for the press a Treatise on the Use of Prussiate of Iron in Intermittent Fevers.

Dr. Edward G. Howell, of this City, has ascertained to his own satisfaction, from researches made in February and March, 1821, that the Capsule of the chrystaline lens is a distinct membrane and of a serous character; demonstrated to be so from analogy, from its habitudes with certain Chemical reagents from morbid derangements of structure, &c. He intends, at some future period, to enter more fully into the anatomical structure of the eye, which, so far as information can be obtained from books, is he thinks, but imperfectly understood.

ERRATA.

Page 1, 4th line from the top, after rapporter read *aux* instead of *aur.*
25, 6th line from the bottom after *prolongées* read *et* instead of *and.*
28, 17th line from the top read *health of the person were so good* instead of *sound.*
29, 17th line from the top, read *of another complaint* instead of *in other complaints.*
35, 11th line from the top, read *periosteum* instead of *peritoneum.*
36, 6th line from the top, read *turgidity* for *torpidity.*
36, 6th line from the bottom, read *if we were* for *if we have.*
37, 11th line from the bottom, dele the word *are* after *too.*
38, 1st line read *efforts* for *effects.*
38, 5th line from the bottom, read *pert* for *port.*
64, 5th line from the bottom, read *Norfolk* for *New York.*
101, 5th line from the top, dele the word *in* before generally.
112, 21st line from the bottom, read *facial* for *fascial.*
113, 12th line from the bottom, read *hemorrhages* for *hemorrhage.*
114, 19th line from the bottom, read *was* for *were confirmed.*
118, 15th line from the bottom, read *spirituous* for *spiritous.*
121, 10th line from the bottom, read *vessel* for *vessels.*
—— 5th line from the top, read *fingers* for *finger.*
—— 9th line from the bottom, read *thumbs* for *thumb.*
132, 133 and 134, the head lines, read *Idiopathic* for *Ideopathic.*
132, in the heading of case XVIII, read *Idiopathic* for *Ideopathic.*

ENTELETON,
J. DIC

ıter part run ugh all Joints are not furnished with both, but
to Muscles. Ligaments and Tendons are insensible in their
those of the ınd also with Nerves, the Filaments of which
ıts, secrete a the Synovia which they contain, and prevent

It is the opinion of some Surgeons that the Susnensory

A Syndesmologic

OR,

A TABLE OF THE LIGAMENTS O

BY J. DICKINSON

LIGAMENTS are white, strong, flexible bodies; they are composed of Fibres variously disposed, but the greater part run in longitudinal di those joints that have a Capsular and Lateral, are less liable to luxate. Ligaments are to bones what Tendons are to Muscles. Some joints ar natural and healthy state, but in a morbid state highly and inexpressibly sensible. They are not elastic, excepting those of the Spine. Ligamen can easily be traced to the surface. Those Arteries which terminate upon the inner surface of the Capsular Ligaments, secrete a liquor which assis other parts from being pinched within the Joints.

Ligaments.	
LOWER JAW.	
1 Ligament Capsulare.	* This keeps the Jaw in Situ, and prevents the inferior Maxillary vessels and nerves from being injured by the action of the Pterygoid Muscle.
1 . . . . . Interarticulare.	
1 . . . . . Laterale.*	
1 . . . . . Suspensory Lig^{t}. Stylo Glossum.†	† This Ligament arises from the styloid process, and runs to the Os Hyoidies, and also to the angle of the lower Jaw; it serves to support the stylo glossus, and gives origin to part of it.
HEAD, to the First and Second Vertebræ of the Neck.	
2 Ligaments Capsular.	* This Ligament arises from the inner side of the Atlas, goes behind to the Processus dentatus; it forms two processes called its Appendages; it keeps the Processus dentatus in its place, and prevents the Spinal Marrow being injured by different motions of the Head.
1 . . . . . Transversale.*	
2 . . . . . Laterale.	
1 . . . . . Perpendiculare.	
RIBS.	
2 Ligaments Capsulare.	The Ribs have a triple articulation.
1 . . . . . Transversale Internum.	
1 . . . . . Ditto Externum.	
1 . . . . . Cervicis Costarum.	
SPINE.	
1 Ligament Intervertebrale.	These Ligaments are elastic.
1 . . . . . Interspinale.	
1 . . . . . Longitudinale Anticum.*	* This Ligament prevents the Spine being stretched too much backwards; it takes its origin from the second Cervical Vertebræ, and descends as low as the Os Sacrum.
1 . . . . . Ditto Posticum.	
1 . . . . . Capsulare.	
PELVIS.	
2 Ligaments Transversalia.	The Ligamentum Poupartii and the Ligamentum Pubis are the two soft Ligaments of the Pelvis.
1 . . . . . Sacro-Ischiatic Internum.	
1 . . . . . Ditto Ditto Externum.	
1 . . . . . Poupartii.	
1 . . . . . Pubis.	
1 . . . . . Sacro-Ilium.	
1 . . . . . Obturatorum.	
2 . . . . . Communia.	

CLAVICLE.	
1 Ligament Capsular.	Ligaments f strength as to s
1 . . . . . Interarticulare.	
1 . . . . . Interclaviculare.	
1 . . . . . Rhomboideum.	
1 . . . . . Conoideum.	
1 . . . . . Trapezoideum.	
SCAPULA.	
1 Ligt. Triangular proprium Scapulæ.	* This form sage of the Su
1 . . . . . Posterior Scapula.*	
SHOULDER.	
1 Ligament Capsular.	This Ligame ceps Flexor C
	There are t Intermuscular in that part of
ELBOW.	
1 Ligament Capsulare.	* The Elbo gaments, whic
1 . . . . . Laterale Internum.*	the appearance
1 . . . . . Ditto Externum.*	
1 . . . . . Orbicular of the Radius.	
FORE ARM.	
1 Ligament Transversale.	The Interos vessels, and at
1 . . . . . Interosseum.	occupied by M
WRIST.	
1 Ligament Capsular.	
1 . . . . . Ditto Sacciform.	These Ligam between the bo
1 . . . . . Ditto Internal.	
1 . . . . . Lateral External.	
1 . . . . . Mucosum.	
HAND.	
1 Ligament Interosseus Superior.	Ligaments o cles of the Han
1 . . . . . Ditto Inferior.	nal, and one T
1 . . . . . Lateral Atricular.	Situ; there are
1 . . . . . Perpendicular.	Dorsal or Palm
FINGERS and THUMB.	
1 Ligament Capsulare.	The lateral
1 . . . . . Laterale.	fines the moti

gical Chart,

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tudinal directions. There are two sets of Ligaments, a Capsular and Lateral. Though all Joints are not furnished with both, but joints are provided with an Interarticular Cartilage, which prevents Collision. Ligaments and Tendons are insensible in their Ligaments are numerously furnished with Arteries, which may be easily injected, and also with Nerves, the Filaments of which hich assists in lubricating the joints. The Capsular Ligaments assist in secreting the Synovia which they contain, and prevent

Ligaments fixing the Clavicle to the Scapula are of such rength as to admit only of a small degree of motion.	**HIP.** 1 Ligament Capsulare. 1 . . . . . Suspensory. 1 . . . . . Transverse.	It is the opinion of some Surgeons that the Suspensory Ligament is not ruptured when the Luxation is downwards and forwards into the Formen Thyroideum.
* This forming the notch into several holes for the pas- ge of the Supra Scapula Nerve and Artery.	**KNEE.** 1 Ligament Patellæ. 1 . . . . . Popliteum. 1 . . . . . Laterale Internum. 1 . . . . . Ditto Externum. 1 . . . . . Ditto Breve. 1 . . . . . Capsulare. 1 . . . . . Alare Majus Internum. 1 . . . . . Ditto Minor Externum. 1 . . . . . Cruciatum Anticum. 1 . . . . . Ditto Posticum. 4 . . . . . Cartilaginosa Lunata. 1 . . . . . Mucosum. 1 . . . . . Transversale Commune.	The first five are external to the Capsular. Fifteen of these can be made out with facility; the sixteenth requires a little more care to be demonstrated.
This Ligament is perforated by the long head of the Bi- ps Flexor Cubitii. There are two Ligaments common to the Os Humeri, viz. termusculare, which give origin to some of the Muscles that part of the Arm.	**TIBIA and FIBULA.** 1 Ligament Capsulare. 1 . . . . . Interosseum. 1 . . . . . Anticum Superior. 1 . . . . . Ditto Inferior.	The Ligaments between the ends of the Tibia and Fibula join the bones so firmly together as to admit of no sensible motion.
* The Elbow joint is strengthened by the two lateral Li- ments, which firmly adhere to the Capsular, so as to have e appearance of being part of its substance.		
The Interosseous Ligament is perforated by many blood- ssels, and at the upper end there is an opening which is cupied by Muscles.	**ANKLE.** 1 Ligament Deltoides. 1 . . . . . Perpendiculare. 1 . . . . . Interfibulum. 1 . . . . . Astragulum. 1 . . . . . Capsulare.	The Ankle is prevented being so frequently dislocated outwards by the Ligamentum Perpendiculare, which descends from the Malleolus Externus, to be inserted on the outside of the Os Calcis.
These Ligaments allow of very little degree of yielding tween the bones in the same row.	**TARSUS.** 1 Ligament Longum Calcis. 1 . . . . . Dorsalis. 1 . . . . . Plantare. 1 . . . . . Interosseum.	Ligaments retaining the tendons of the Muscles of the Foot, are the Ligamentum Tarsi Annulare, three Vaginal, one Laciniatum, and the Accessory Ligaments of the Flexor Tendons of the Toes, the Transverse Ligaments of the Extensor Tendons, which keep them in Situ.
Ligaments or Sheaths retaining the Tendons of the Mus- s of the Hand and Fingers, are the Annular, three Vagi- , and one Transverse, by which the Muscles are kept in ; there are also several short slips, having the name of rsal or Palmar.	**METATARSUS.** 1 Ligament Capsulare. 1 . . . . . Laterale.	The Ligaments of the Tarsus allow of no more motion han is necessary to prevent concussion in walking.
The lateral Ligament adheres to the Capsular, and con- es the motion to flexion and extension.	**PHALANGES.** 1 Ligament Capsulare. 1 . . . . . Laterale.	